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EDITORIAL.

EUROPEAN CHRONICLES.

BOVINE TUBERCULOSIS AGAIN.—Our readers have certainly not lost sight of the new theory expressed by Prof. Koch in relation to the contagiosity of bovine tuberculosis to man, nor of the scientific discussion which took place at the seating of the Congress in London. Since that day, which certainly has marked a date in the history of that disease, numerous have been the articles which have been published by men of authority, such as McFadyean, Nocard, Arloing, Bang, and others.

Cases after cases are brought forward and records are received from everywhere to show the error which, their authors claim, has been made by the celebrated German bacteriologist. And, yet, will those be accepted as conclusive? Some of them were known before the statement made by Koch, and to a certain extent he ignored them; therefore it cannot be supposed that he will accept others brought in the same light, and then what will he require for experiment which he would consider as possible?

Will man do?

At the time of the sensational explosion of Koch's new theory, Dr. Garnault, in France, and shortly after a journalist of Belgium, who signs himself Jean Bar, offered themselves for experiments, and I believe that an American made also the same offer. What has become of the offers made? Has the American had the opportunity to sacrifice his life? Has Mr. Jean Bar

gone to the bacteriological Institute of Liege, as it was told? We cannot say. But, thanks to the *Archives de Parasitologie*, we can keep our readers *au courant* as to what has been accomplished by Dr. Garnault. His case is presented in the *Archives* fully. It is no longer communications from a political paper, it is from one of the most scientific journals of Paris, which records the whole history from the beginning to the end, at least to the experiment, as it will be begun.

Dr. Garnault is forty-one years old, weighs 100 kilos, and has always been in perfect health. On Aug. 14, 1901, he wrote to Prof. Koch, offering himself for experimentation under whatever conditions he desired. When in Paris, while waiting for an answer from Berlin, he had called on Nocard, who tried to persuade him to give up his idea and finally positively refused to inoculate him or even to furnish him with cultures. But, notwithstanding the high authority of the Professor from Alfort, and the opinion expressed by high personalities of the medical profession, among them Dr. Brouardel, who, like Nocard, considered the experiment as proving nothing and of a frightful responsibility, incurred uselessly—he waited a week, and, receiving no answer, he started for Berlin and called on the German professor.

His visit was not more successful. The plan of his inoculation, as he had thought might be done, did not seem to be acceptable, as says Dr. Garnault for Koch: “*It is not inoculation, but the simple ingestion of raw, unboiled milk, continued for months, which shall constitute the most convincing demonstration.*” *

In the presence of such a position of Prof. Koch, Dr. Garnault has modified his former plans and proposes now: after a testing injection of tuberculin, he will during one year, without interruption, drink only tuberculous milk, as rich in bacilli as he will be able to obtain. Every two or three months he will receive an hypodermic inoculation of a very virulent culture of bovine tuberculosis, whose virulence shall be controlled on calves as witnesses!

* *Archives de Parasitologie*, Vol. V, No. 1, p. 173.

Shall we hear more of the experiment of Dr. Garnault? The sacrifice of his life for a scientific object, useless according to Nocard, Brouardel and others, will certainly give rise to many different opinions, but whatever those may be, it seems that in this Dr. Garnault will have the admiration of all those who, like him, are willing to die for their opinions, call it fanaticism or insanity. Prof. Koch, with his certitude of harmless bovine tuberculosis, and unwilling to inoculate himself, has certainly not the brilliant side of the question.

* * *

It will be asked how is the question to be settled. Koch will not inoculate himself, as it is stated he did at the time he wanted tuberculin placed on the market; he will not incur the useless frightful responsibility of killing a man in inoculating him, and yet he believes in such little susceptibility on the part of man that it may be said he is refractory to bovine tuberculosis. To await the result of Dr. Garnault's experiment may demand some time, and when its result will be known it will prove nothing.

In the *Bulletin No. 33, of the Bureau of Animal Industry*, recently published, where Dr. D. E. Salmon treats the subject of the relation of bovine tuberculosis to the public health, a bulletin which I would advise every one to read, as it treats the subject with a master's hand, and constitutes by itself a powerful refutation of the plea advanced by Koch, there is a little notice on the bottom of page 35 whose importance and value will not be overlooked. It says:

"If it were true that man is entirely insusceptible to bovine tuberculosis, it would appear that monkeys, the animals most closely related to man, should also be insusceptible, or at least should not be easily infected with bovine bacilli. An experiment of the Bureau of Animal Industry, concluded while this bulletin is going through the press, indicates, on the contrary, that these animals are extremely susceptible to this form of tuberculosis. A baboon inoculated subcutaneously showed an ulcer locally, great enlargement of the axillary glands, and,

later, symptoms of acute generalized tuberculosis. After death the lungs, liver and spleen in particular were found filled with tubercles, and the other organs were more or less involved. Another monkey of a different species, inoculated at the same time, has become emaciated and has probably also contracted the disease."

Evidently the monkey is closely related to man, and to every unprejudiced mind this experiment will add its weight to those made on other animals; but, will say Koch:—"It is not man, it is not by ingestion of food, of milk that the infection has taken place," and the "most convincing demonstration" is not given.

Patience. We already know of a case of generalized tuberculosis of the monkey, whose carcass we had the opportunity to examine; tuberculosis brought about by ingestion of tuberculous food, and, again, the Société de Médecine Vétérinaire Pratique is now engaged in the experiments I have spoken of. In a comfortably heated quarter of the large abattoir of the market of La Villette, three monkeys have been placed after having been tuberculinized by Prof. Nocard to ascertain their freedom from tuberculosis. They are to be fed with preparations of tuberculous substances from bovine origin. The feeding will vary. One meal only for one, another will have two meals a week, the third will have three.

Closely watched by veterinarians, the animals are exempt from exposure from any other way; in fact, are placed in as strict condition as the importance of the experiment requires.

I shall give our readers the results as soon as they are known.

* * *

But how different from the statement of Koch is the one made by Prof. Behring, at one meeting of the Academy of Sciences of Stockholm, and which was published in the *Berliner Thierärztliche Wochenschrift*: "I do not bring you hopes, but facts which make me believe that I have succeeded in giving bovines immunity against tuberculosis."

Numerous observations have proved that the ordinary con-

ceptions that one has of the virulence of tuberculosis, are subject to modifications.

In relation to bacteridian anthrax, says Behring, one may speak of virulence and of attenuation. With tuberculosis, it may happen that a breed of tuberculous bacilli, entirely attenuated for guinea-pigs, may yet remain quite virulent for rabbits and be even more so for horses; or, again, on the contrary, that another very virulent for guinea-pigs may prove much less dangerous for bovines.

In experiments upon bovines, it is possible to insure the immunizing action of tuberculous bacilli attenuated in their virulence for bovines. Immunization of those animals is better obtained by injection in the blood of bacilli comparatively inoffensive, according to the principle established by Pasteur, for the immunization of sheep against anthrax.

The tuberculous bacilli of man, cultivated for a long time in artificial media, behave towards bovines as a vaccine towards an active virus. This same human bacillus, cultivated since a short time or taken directly from man, specially after having passed through the goat, is very virulent for bovines.

The experiments made by Behring at Marbourg have proved the possibility of giving immunity to bovines against tuberculosis. He now wants to establish by experiments the minimum of time, of nocuity for the animal and of expenses necessary to realize in a practical point of view the immunization of bovines.

To carry this work to a satisfactory end he has decided to use the whole amount of the Nobel prize which was granted to him. The battle which is now fought against bovine tuberculosis is only one step forward in the struggle which will bring us to the extinction of human tuberculosis, and the discovery announced by Behring as an accomplished fact has a capital importance. It opens new fields for hope of immunization of man against tuberculosis and in showing that the tuberculous bacilli of man can be very virulent for bovines, it has given another severe blow to the theory presented by Koch. A. L.

NEW JERSEY IN LINE WITH A VETERINARY LAW.

The profession throughout the country will unite with their brethren in New Jersey in exultation at the news that the bill which has been pressed during the present session of the Legislature has passed both houses, received the Governor's signature, and is now a sovereign law. This bill, as most REVIEW readers know, creates a Board of Veterinary Medical Examiners, who take office on the first Monday in May. The act is entitled "An Act to regulate the practice of veterinary medicine, surgery, and dentistry in the State of New Jersey, to license veterinarians, and to punish persons violating the provisions thereof." It will thus be observed that the framers of the bill have forestalled the omissions in the laws of several of the States which have hitherto passed regulating acts, as the practice of dentistry is forbidden to others than licentiates, leaving no room for argument during the prosecution of violators, who seek refuge under the claim that they practice the art of dentistry only. Thus another strong State steps into line by recognizing the legitimate veterinary profession, and shuts its doors in the faces of charlatans as well as those who secure their education from institutions which fail to fulfill the modern idea of scientific training.

Here is another splendid example of the value of State organization. Instead of warring factions, as existed a few years ago, the amalgamated associations, under the banner of the Veterinary Medical Association of New Jersey and the irresistible leadership of President William Herbert Lowe, are as united and harmonious and enthusiastic a body of professional men as exist in this country, and they threw their shoulders against the legislative doors with so much force that they swung inward with a bang, and they tired not until every member of the Senate and Assembly had been personally appealed to, with the glorious result that we are to-day enabled to chronicle.

In a private letter President Lowe says: "It is hardly necessary to explain to you the great work done through the machinery of our State organization. The influence and power of the

consolidated State association has certainly been thoroughly tested by the achievement the profession in New Jersey is so proud of to-day. The act could not possibly have been passed by the Legislature had it not been for our splendid organization. The members in our twenty-one counties worked like one man, and every order was obeyed with a will that made one's heart glad, and each legislator was interviewed by a veterinary constituent. We were fortunate in having the hearty endorsement of the State Grange as well as the State Board of Agriculture. At its recent meeting in Trenton the latter body adopted the following resolution by a unanimous vote: 'That the State Board of Agriculture, recognizing the necessity and value of competent veterinary service to live-stock owners, agricultural interests, and the preservation of public health, do heartily approve and endorse the movement for the establishment of a State Board of Veterinary Medical Examiners to regulate the practice of veterinary medicine and surgery in the State of New Jersey.' I am personally of opinion that the profession has not been in close enough touch in the past with agricultural interests, boards of health, and kindred organizations. It is by coöperation that the best results can be obtained. . . . I have been unable to write all the veterinarians who have assisted in the enactment of the present bill, and you will therefore do me a great favor if you will kindly thank the members of the profession throughout the State in behalf of myself and the Legislative Committee through the pages of the REVIEW."

Three cheers for New Jersey ! Next !!

THE PROVINCE OF THE A. V. M. A.

The February *Journal* advocates the dropping of clinics and papers upon practical subjects at the meetings of the A. V. M. A. Such a step would, in our judgment, be fatal to the best interests of this national body, and would result in a loss of membership and interest that would rob the organization of its representative character. What practising veterinarian would journey from the East to the Northwest to hear the reading and

discussion of a long thesis upon Texas fever, for instance, important and vital though the subject be, when he could read the whole affair at his leisure at home? We need all classes of the profession in the A. V. M. A., and when any number are deprived of the material which concerns their interests and their requirements, their support is lost. Sectional work is the only solution of the subject, and the association is rapidly resolving itself into that shape. It is gaining in quantity and quality of its membership and influence every year, and we beseech the members not to do one act which will lessen its progress. Let well enough alone.

ASSEMBLY BILL No. 254, introduced in the New York Legislature by Mr. Merritt, an abstract of which was published in the REVIEW for February, has passed the lower house. We regret to say, however, that the Public Health Committee, to which it was referred upon its introduction, has through amendment shorn it of all the benefit which it would in its original form have conferred upon the veterinary profession. When the bill started on its course it made it mandatory upon the district-attorney of a county to prosecute an offender when supplied with evidence by a regular veterinary medical association, but when it emerged from the committee it simply became obligatory upon such society to place a copy of all papers in his hands before such prosecution is begun, without conferring the least assistance upon the society in its fight to purify the ranks of the profession. It amounts to the addition of red-tape, and it would have been better had the Public Health Committee have allowed it to slumber in the proverbial pigeon-hole. In the meantime, the subject of the prosecution of illegal practitioners in New York State lies dormant, and the quack and fakir wax fat with the product of their nefarious trade.

READ the very full and interesting report of the fourteenth annual meeting of the Iowa State Veterinary Medical Association, published in the department of "Society Meetings," in this

number. It is an object lesson in such reports, and cannot fail to be of value to the members and to veterinarians in general. Three of the papers presented are also published this month, and the remaining ones will appear in quick succession, as they are all in hand. Incidentally, the profession should appreciate the enterprise of the REVIEW, as the space requisite for such a lengthy document has necessitated the addition of many pages, as the publishers are unwilling to permit any of the regular departments to suffer in consequence of this heavy demand upon their pages.

"THE LIVING AND THE DEAD: Reminiscences of the Veterinary Practitioners of Forty Years Ago. By One of Them." Such is the title of a series of articles shortly to begin in the pages of the REVIEW, and to the older members of the profession who were contemporaneous with the events narrated, as well as to those who treasure the precious history of the *personnel* of veterinary medicine in America, it will afford very entertaining reading, while the anecdotes and personal characteristics of the men who were upon the veterinary stage at the outbreak of the Civil War will appeal to their sense of humor and curiosity.

WE wish to ask a number of correspondents and secretaries of veterinary medical associations to bear with us for a short time, as it became necessary this month to withhold a large quantity of valuable material sent in for publication. The demands upon our space have been so great that, even with a heavy increase of it, we find that much will have to be held until the May number, when we hope by extra pages to keep faith with all of our valued contributors.

WE were much gratified at receiving an interesting letter on March 31 from Dr. Olof Schwarzkopf, U. S. Army, stationed on the Island of Luzon, Philippines. It also contained an article for the REVIEW.

ORIGINAL ARTICLES.

MILK INSPECTION.

BY ANDREW HYDE, D. V. S., NORWICH, CONN.

Read before the Connecticut Veterinary Medical Association, February, 1902.

(Concluded from page 984, Vol. XXV.)

Milk is a good media for the multiplication of bacteria, while the cows themselves, their food and excrement are the hosts of millions of species. That the cow stable is the most fertile source of bacterial infection of milk must be apparent to anyone who is familiar with the general condition of them. The cow that is covered in dust and manure from infrequent cleaning, is the greater cause. With back, belly, sides, hips, flank, tail and udder loaded, it is impossible for the milker to keep the filth out of the pail. If she is unhealthy, she is doubly a source of danger.

An observation of the condition of stables where sanitation is not practiced, will convince those who may think inspection of them unnecessary, that they are mistaken. For example, let a visit be made to the basement of a barn seventy-five feet long, and observe a row of cows, extending from one end to the other, and three or four feet back of them a pile of manure of equal length, and well up to the floor above. One door is the usual number, and the windows are few and small. Drainage is imperfect, ventilation unknown, and everything is saturated with putrefying odors and exhalations of the cows. If one has any doubt but that such odors are absorbed by the milk while in the udder or get into it during the process of milking, have some of the morning's milk delivered for the breakfast coffee, and it is quite safe to say that it will not require the logic of a senator to prove that milk produced under such circumstances will be disagreeably tainted.

Other impurities of milk may occur from adulteration, coloring matter, chalk, burnt sugar and salt are sometimes put into milk.

Mixing skim milk with whole milk to obtain an average quality is practiced by the skilful. This practice is said to be on the increase. The removal of a part of the cream is another method of adulteration. Milk thus adulterated is not only unsafe, but it contains less food value than it should, and the consumer is deprived of nourishment which is supposed to be present.

If one is dishonest enough to water milk, he will probably not be concerned about the purity of the water added. Impure water contains many bacteria, among which may be some pathogenic species, such as *bacillus coli communis*, that cause indigestion, diarrhoea and dysentery in children, and adults having weak digestive organs.

Various chemical compounds are sometimes added to milk, to check or prevent bacterial changes. Among these may be mentioned formaldehyde, borax, salicylic acid, boracic acid, salicylate of sodium, carbonate and bicarbonate of sodium. These substances have very little taste or smell, and can only be detected by a chemical analysis. Their general use as preservatives is regarded as detrimental to the public health.

Milk may vary in quality from causes other than the use of adulterants. Some breeds of cows and individual of the same breed give richer milk than others. Holsteins are famous for producing large quantity, while the Jerseys are noted for the richness of their milk. Food has an important bearing on the quantity of milk secreted. The period of lactation also influences the composition of milk, notably the casein and albumin.

Normal milk contains 33 per cent. of casein and albumin, but the first few days after calving the milk may contain 15 per cent. of these constituents. The total solids of milk increase as the period of lactation lengthens.

"HOW TO EXAMINE MILK."

The essential thing to do in examining milk is to distinguish between flagrant fraud and unavoidable variations. The first thing to be done is to obtain a sample, which may be either

a single or composite one. Before the sample is taken the milk should be thoroughly mixed, so that the quantity taken may fairly represent the quality of the milk from which it was removed. A single sample may not be sufficient to clear away all doubt in regard to the quality of the milk from an individual cow or of a herd of cows, but a composite sample, extending over one or two weeks or more, will give reliable data on which to base an opinion, because the danger of occasional variation is avoided. It is true, the circumstances of municipal inspection may be such that the use of a composite sample for seeking positive evidence is impracticable, and that other methods will give a safe result.

A composite sample is the total of daily samples extending over a desired time, *i. e.*, it may be the sum of the daily samples of a week or a month. A sample is collected daily (say one-third of an ounce) and placed in a bottle containing some fat solvent, such as ether or chloroform, but preferably carbon bisulphide (one objection to its use is its disagreeable odor), because it is cheap and has the property of preserving the normal quality and miscibility of milk for a long time, probably indefinitely. For example, suppose the composite sample is to cover a period of ten days, place in a bottle one-half ounce (about 15 cc.) of carbon bisulphide, and every day add one-half ounce of the properly mixed milk. Then shake the bottle until on standing the fat of the milk is all on the bottom of the bottle. Each time, after putting in the daily sample, the bottle must be tightly corked. At the end of ten days the composite sample will consist of five ounces of milk (about 150 cc.) and ten per cent. as much of carbon bisulphide. It can then be sent to a milk analyst, if one is not prepared to make an accurate analysis himself.

Good whole milk has a whitish color and sweetish taste. If it stands for several hours cream rises, and if complete separation has taken place, the cream should be about one-fifth of the total bulk. Skimmed or watered milk is thinner than whole milk and has a bluish-white color. If the milk is pure there

should be no sediment on the bottom of the vessel after the cream has set. The yellowish color of milk is usually due to fat, but it may be caused by bacteria and the presence of coloring matter.

* "To detect coloring matter, add to some milk an equal quantity of ether and shake the mixture ; on standing, if coloring matter has been used, a yellow colored solution will rise to the surface ; if none is present, the solution will be clear."

† "Annato or Butter Color is determined as follows : 100 cc. of milk, made strongly alkaline with sodium carbonate, are placed in a small cylinder ; a strip of filter-paper, about one-half inch wide and five inches long, is introduced, and the whole allowed to stand in the dark for twelve hours. If annato is present, the strip of paper, after washing, will be a pale salmon color, which is changed to a decided pink by moistening with a solution of stannous chloride, and after drying at the temperature of the room to a bluish color, on treatment with strong sulphuric acid."

The test for acidity of milk. It is sometimes desirable to know if milk is fresh, or old and near the souring point, as in the latter condition it is unfit for infants, children or delicate persons, and its value is less. For this test the most convenient method is that of using certain alkaline tablets (known as Harrington's Alkaline Tablets). Two of these are dissolved in water and added to an ounce of milk. They are of such strength that a solution of two of them will turn an ounce of fresh milk pink. If the milk remains white after this quantity has been added the supposition is that it is old and near the souring point, or that acid has been added.

The test for cream is a simple one, but not accurate, and about the only advantage of it is, that it gives a good opportunity for noticing if filth or sediment is present. The apparatus required is a creamometer, which is filled with milk to the zero mark, and then put in a cool place for twenty-four hours,

* Harrington & Woll's Testing Milk, p. 92.

† N. Y. City Board of Health Report, 1896, p. 169.

when the per cent. of cream can be noted. Good milk should contain 20 per cent. of cream.

Another method may be used to facilitate the test. Fill the creamometer half full of hot water (120° F.) to which has been added a few drops of a solution of caustic soda, then fill with milk up to the zero mark. After stirring well set in cold water (40° F.) for thirty minutes, when the cream will have risen, and the percentage present, multiplied by two, will be the cream content of the sample tested.

LACTOMETER TEST.

This test is used to determine if milk has been skimmed or watered and is based on the specific gravity of milk, which is slightly heavier than water, ranging in good milk at 60° F. from 1,029 to 1,033. The instrument required is a glass bulb, with a tubular neck, containing a graduated scale. Some lactometers have a thermometer attached, which is very convenient, as not only the gravity is indicated, but also the temperature of the milk. Make the temperature of sample 60° F., then insert the lactometer, and note the reading of the scale at the surface of the milk. Good milk will indicate about 110 on the lactometer at 60° F. If the lactometer sinks below 100° and the milk is thin and bluish-white, water has been added. On the other hand, if the lactometer reading is above 100° and the milk is rich in appearance and sticks to the glass, it may be considered a pure milk. If cream is removed the gravity is increased; if water has been added, it is decreased, hence, a sample of high gravity indicates skimming, and a low one watering of the milk. Some cream can be removed and water added by the skillful, and the gravity remain unchanged, and to detect that condition another test is used in connection with the lactometer, known as the Babcock test, which by certain formula discloses the proportion of fat and total solids present. A fair opinion of the composition of milk is indicated by the percentage of fat present, as the total solids increase and diminish as the fat is greater or less. If water has been added to milk the percentage of fat is reduced in proportion to the other con-

stituents, but if milk is skimmed there is a greater proportion of solids, not fat and water. Full directions for using the lactometer are found in Harrington and Woll's "Testing Milk and its Products," pages 80 to 85.

For determining the fat content of milk the Babcock test is a rapid method, and the one most extensively used. The procedure for making the test is simple, but requires some careful attention to details. Complete descriptions for making the test are contained in "Bulletin of Wisconsin Experiment Station."

* "Positive evidence of adulteration is furnished, a fair sample of herd milk being taken :

- (1) When the Sp. Gr. at 60 degrees F. is less than 1,029 and the fat is 4 per cent or over, the milk is watered.
- (2) When the Sp. Gr. at 60 degrees F. is more than 1,035 and the fat less than 4 per cent., the milk is skimmed.
- (3) When the fat is 3 per cent. or less and the total solids more than 12.00 per cent., the milk is skimmed.
- (4) When the fat is 3 per cent. or less and the Sp. Gr. at 60 degrees F. is less than 10,319, the milk is skimmed and watered."

"Test for formalin." A few drops of milk are floated on a small quantity of concentrated sulphuric acid, containing a trace of chloride of iron. If formalin is present a violet blue ring will appear at the line of demarkation."

"Test for salicylic acid or salicylate of sodium : Coagulate some milk with a few drops of acetic acid, filter, and shake the filtrate with ethyl ether in a separating funnel. The ether is carefully drawn off and evaporated in a water bath. The residue, if any, is treated with a little water, filtered, and a drop of neutral ferric chloride added ; a violet color indicates salicylic acid or salicylate of sodium.

"Sodium carbonate and bicarbonate are indicated by a strong alkaline character of the ash and prominent effervescence by adding dilute acids. Also to 10 cc. of milk and 10

* Annual Report of the Chief Inspector of Milk and of the Chemist of the Board of Health of Philadelphia, 1897. P. 34.

cc. of alcohol and a little of a one per cent. rosolic acid solution. If soda has been added to the milk, a rose color is produced; and if absent a brownish color is present."

"Test for borax or boracic acid: To 100 cc. of milk, add lime water to make it alkaline, dry it, and then burn the mixture slowly to ash; acidify the residue with strong hydrochloric acid, and add 20 cc. of methyl alcohol. Connect the flask with a condenser and distill 10 cc. of the methyl alcohol into a platinum dish. Place the dish in a dark place and ignite the alcohol; if borax or boracic acid is present, it will burn with a grass-green flame."

"PREVENTIVE INSPECTION."

Much praise is given to the dairyman or dealer who pasteurizes his milk, and puts on the market in a practically germless condition, but greater credit belongs to him who conducts all his dairy operations in such a sanitary manner as to render pasteurization unnecessary. Nothing is added to the nutritive value of good milk by heating it to a temperature sufficient to pasteurize it, and some assert that such a process destroys some of its digestive properties, as well as imparting to it a burnt taste, which is very disagreeable to some. There is also the question, if the practice of pasteurization for the removal of filth was generally adopted, would it not tend to carelessness and more filth in the management of dairies?

Municipal inspection should begin by an examination of the cows. This should be done by a competent person, selected because of his ability, the result of a competitive examination if necessary. The precaution of testing the cows with tuberculin should be done whenever it is expedient, notwithstanding the recent opinion that the transmission of tuberculosis from bovines to the human family is very slight. A careful examination should be made of the health and general appearance of the cows. Those having recently calved, or seriously lame from foot-rot, or the victims of sores discharging pus, should have their milk excluded from the commercial article. The same may be said of the milk of very old cows, or those in a

debilitated condition, or those having a bodily temperature sufficient to indicate disease. The list of ailments is a long one to which cows are more or less subject that render milk unfit for food. Many of these might escape the attention of the well-meaning dairyman, simply because he had not been trained to observe them. The trained entomologist can discover at a glance the small insect on the trunk of a tree, while one who lacked his power of observation could not find it until it was pointed out to him. So, too, with the educated veterinarian; he can, for example, observe the unusual convexity of the lens of the horse's eye, that makes the animal unsafe, which would in all probability be overlooked by even the skillful horseman. It is not a case of short-sightedness of him who could not see the insect, or the convexity of the lens, but a highly developed power of observation of the entomologist and veterinarian.

The food and feeding of dairy cows should be under systematic regulation. That certain kinds of food are injurious to cows and their milk is well known. Bitter weeds, turnips and wild onions will produce a bitter taste and disagreeable odor in the milk of cows consuming them. Pungent smelling ensilage which is in the active stages of decomposition should be excluded from the cow's ration. The by-products of distilleries, readily available in the vicinity of large cities, such as brewery grains and swill, produce a large flow of milk of inferior quality. Moreover, the cows fed with that food are not as healthy as those fed on good hay and grain. Musty coarse fodder of any kind, and decaying vegetables should be excluded.

To avoid the dust incident to feeding, it is necessary that the cows should be fed after milking; the cows should be cleaned after the dust settles. The manure and other stable filth should be removed frequently. It is impossible to keep dirt out of the milk if the atmosphere of the stable is laden with it. The same is true if the body and hips of the cow are covered with dirt and particles of manure. The stable at best is a place where dirt gathers rapidly, therefore it is important

to exercise the precaution of having it frequently and thoroughly cleaned. Of the list of impurities found in milk, the majority have their source in stable dirt. When an eighth of an ounce of dirt is found in a dozen gallons of milk, it is apparent that there is gross carelessness in the management of the stable and its occupants.

The necessity of pure water for the cows, and cleansing the dairy utensils, cannot be made too emphatic. The source of the supply should be inspected to learn if the well or spring is sufficiently deep and clean and so located that it will not be polluted by surface drainage or otherwise. If the location or depth of the water source seems unsuitable, and there is fear that the water is being contaminated with bacteria from surface drainage, the stable, barnyard or dwelling, a sample should be sent to a bacteriologist for examination. The water from a well infrequently used should be examined by a bacteriologist or the water removed a number of times before being used regularly.

The drinking places for the cows should be slightly elevated, and the surface about the trough paved with cobble stones or other suitable material, to prevent mud and dirt from getting into the water. Spittle and particles of food from the cow's mouth are a constant cause of filth in the water, making it necessary to frequently clean the watering trough or other drinking place, unless it be a running stream of considerable size.

The arrangement of the stables should be such as to make them light, airy, roomy and easily drained. Cows kept in apartments partly under ground (basements) will not do as well as in well constructed stables above ground. There is a dampness to under ground stables, which is almost impossible to overcome. In addition to this there is insufficient light and ventilation and the inevitable condition of imperfect drainage. These unsanitary conditions prey upon the vital energy of a cow and weaken her physically. All of them can be obviated in stables above ground. Five hundred cubic feet of air space per cow is deemed sufficient, if the stable is well supplied with

windows and ventilators, to furnish light and air. It is, of course, important to frequently remove the manure some distance from the stable; it ought never to be piled in the stable, as is often done. The stable can be easily drained if the flooring is hard wood laid tight, giving a little pitch for the liquids to run off into a tank provided for the purpose.

Carelessness on the part of the milkers themselves is a common cause of dirty milk. They should never begin milking immediately on entering from the hay-field or hay-loft or after doing any dirty work. Dust and filth will settle on their clothes as well as on the cow's back, and it is just as essential that it is removed from one place as from the other.

Another step in the control of milk is the inspection of the dairy and other places where milk is kept, handled and sold. The farm dairy, in most instances, consists of a milk room, provided with the necessary utensils for containing, straining and cooling the milk. This place should not be so situated that it will get foul odors from the outside, nor so conducted that they will originate within it. The room should be as pure as sunlight, fresh air and strict cleanliness can make it. It cannot be kept pure if it is immediately adjacent to the barn-yard, stable or silo. Special care must be exercised to dry the place out once a day by opening the windows, etc. The wood-work as far as possible should be painted in some light color, that will reveal dirt and decaying milk upon it. There should be an abundance of pure water in the room, if the milk containers and other utensils are to be easily and thoroughly cleaned.

The milk-pails, cans, etc., should be made of substantial metal, well tinned, and as seamless as possible. Crevices serve as the abode of germs and filth, which cannot be fully removed without hot water, some cleansing preparation and special care. The dairy room should be well piped for drainage.

While it is almost the universal practice on the farm to provide a place especially for keeping milk, it is not always the case in the butcher shop, grocery store and restaurant where milk is kept for sale. Even in the consumer's home, there is

often a lack of attention in caring for milk. The consequence is, it sometimes sours quickly and a careful dairyman is blamed. It is just as necessary that all of these parties should exercise the same care of their milk as the dairyman gives it, while it is in his possession. Frequently there is very little thought given by dealers and consumers to the temperature of the places where milk is kept. It is generally intended to keep it in a cool, suitable place, but whether the temperature is sufficiently cold to keep good milk from souring is seldom considered. Milk delivered in good condition can be kept sweet one or two days at a temperature of 50° F., but it will not keep from souring that length of time if exposed to the higher temperature of some refrigerators in very warm weather. An ice box may seem cold on account of the intense heat outside, but the thermometer placed in it would register considerably above 50° F.

Sometimes milk which is clean and pure when it leaves the dairyman's hands acquires a peculiar odor afterwards. The refrigerator, whether in the grocery store, market, residence or restaurant, and the container in which milk is kept, are a common cause of this trouble. It infrequently happens that the butcher who sells milk keeps it in an open vessel in a refrigerator with meats, some of which may be tainted.

The family supply is placed in the refrigerator with cooked meats and vegetables. Others keep it in unsuitable receptacles, as wooden vessels and old dishes. The property of milk to readily acquire odors makes it necessary that it should at all times and places be kept under conditions to prevent them being taken up by the milk. Therefore, as stated above, it is important that the dealer and consumer exercise the same care as the dairyman gives it.

I HAVE every copy but one of the REVIEW since 1887, and could not get along without it"—(*M. J. Jones, V. S., Cuba, O.*)

"I PERUSE THE REVIEW every month, not only because it is interesting, but because it is absolutely necessary in order that I may know what is going on in the veterinary profession."—(*J. Payne Lowe, D. V. S., Passaic, N. J.*)

ACUTE EPIZOÖTIC LEUCOENCEPHALITIS IN HORSES.*

By W. G. MACCALLUM, M. D., *Associate in Pathology, Johns Hopkins University, and S. S. BUCKLEY, V. S., Veterinarian, Maryland Agricultural College.*

(From the Pathological Laboratory of the Johns Hopkins University and Hospital.)

PLATES I, II, III AND IV.

A recent epizoötic among horses in Maryland, resulting in the death of a great many animals after a very brief illness, has led to the post-mortem examination of a number of such animals with results which seem worthy of note.

The disease, which is popularly known in this region and probably elsewhere as "cerebrospinal meningitis," presents fairly characteristic symptoms, which when the cases appear in epizoötic form lead readily enough to a diagnosis. Prodromal symptoms are not always present, although in many cases a general malaise may be noted before the acute onset. The acute symptoms are in general such as may be referred to a cerebral lesion. There may be drowsiness associated with an impairment of sight. Partial or complete paralysis of the pharynx is often observed; twitchings of the muscles of the shoulders and thighs, coldness of the extremities, and a general condition of unsteadiness and weakness with a tendency to walk to one side or a staggering, objectless gait, arise early in the disease. The pulse is usually normal; the temperature varies between 96° and 103° F., an elevated temperature usually indicating a secondary complication.

The horse may then become gradually comatose, responding slightly or not at all to stimuli and soon sinking to the stable floor not to rise again. In other cases there is a wild delirium, the animal rearing about and rushing blindly against obstacles, and this may be followed by exhaustion and the comatose condition.

* Reprinted from the *Journal of Experimental Medicine*, November, 1901.

The duration of the disease varies from a few hours to a week, the average being perhaps 72 hours. Horses which recover are said to become "dummies"—animals with a permanent cerebral lesion and defective intelligence.

The following pathological report is based on the examination of four brains, brought to the laboratory by one of us (Buckley), from animals dying in the acute stages of the disease. There was also one brain from a horse which was said to have had the disease some time before and to have recovered, dying afterward from some other cause.

Of the four brains from acute cases, three were hardened in formalin and one was fresh. Of these, none showed any signs of the presence of an inflammation of the meninges; there was at most a trifling hyperæmia of the pia mater. The surface of the fresh brain showed no localized or circumscribed alterations in color, but the normal level of the convolutions was not everywhere preserved. In the frontal region on each side, anterior to the motor region of the cortex, there was a slightly depressed area which was softly fluctuant, but not marked out by any superficial hyperæmia or discoloration. On cutting through this brain a glairy fluid with small granular pulpy masses of whitish tissue flowed out from the softened area, and the rather thin roof composed of the meninges with the grey cortex collapsed over the cavity thus left. The lesion seemed almost entirely limited to the underlying white matter, which throughout an irregular area, perhaps 2x1 cm. in diameter in the left hemisphere, and a symmetrically placed focus 5 cm. in diameter in the right, was completely softened into a diffluent mass made up as described of shreds of softened, necrotic-looking, greyish white brain substance lying in a greyish, glairy or somewhat glutinous fluid. The portions of the brain substance forming the lining of the cavity could be fairly sharply outlined from the adjacent more normal white matter by its softness and raggedness, by its mottled greyish and yellowish opacity with translucent areas, and by the presence of numerous minute haemorrhages sprinkled through it and adding to its mottled ap-

pearance. The remaining brain substance showed no apparent abnormality. The lining of the cerebral and olfactory ventricles was not congested nor inflamed. The blood-vessels were carefully traced and showed no thrombotic occlusion at any point.

Examined microscopically in the fresh state, the softened material showed necrotic cells and cell fragments of various forms; there were also beaded elongated fibrils thought to be axis cylinders with adhering myelin droplets. But few nuclei were found. No bacteria were found by the ordinary staining methods.

Cultures were made aërobically and anaërobically on various media—agar, glycerin agar, blood-serum agar, hydrocele-fluid agar, etc.,—but all were negative. A rabbit inoculated with 1 cc. of an emulsion of the softened material into the ear vein remained well.

The appearance of the hardened brains corresponds very closely with that just described. Nowhere were any blood-vessels thrombosed or occluded in any way. Nowhere was there evidence of inflammation of the meninges. Section of the cerebral hemispheres showed irregular areas in the white matter of the occipital as well as the frontal lobes, and once in the temporal lobe, in which the brain substance had been softened and partly replaced by a translucent coagulated substance resembling agar. Shreds of greyish brain substance coursed through this clear gelatinous material. The adjacent greyish and opaque brain substance was studded with haemorrhages through a thickness of about 3 mm. Where, as in some cases, the areas of softening were made up mainly of the greyish necrotic brain substance without much collection of fluid, the haemorrhages were scattered throughout. In no instance did the cortical grey matter appear to be implicated, nor were the basal ganglia invaded.

Microscopically the lesions are practically identical in all the four cases except that while in all the process is quite acute, in one the destruction was less complete than in the others and

the replacement of the necrotic material by coagulable fluid less extensive. A general view of a section carried through the cortex into the centre of such a focus shows the meninges practically normal, the elements of the grey cortex not notably altered, the nerve cells staining well, the blood-vessels patent and filled with blood. Passing inward the nervous elements begin rather abruptly to degenerate, disintegrate and disappear, and haemorrhages begin to occur here and there; further toward the centre no more nerve cells are visible, axis cylinders are much degenerated, neuroglia cells stain badly, and the tissue has a much disintegrated appearance, being infiltrated with not very numerous polymorphonuclear leucocytes and fewer mononuclear round cells. Still further, and all evidences of tissue, except for small islands of necrotic substance, disappear in the highly refractive vacuolated hyaline material described (Plate I, Fig. 1.). We have then to consider in detail :

1. Changes in nervous elements.
2. Changes in neuroglia.
3. Changes in blood-vessels.
4. Changes in lymphatics.
5. Exuded fluid and cells.

The pyramidal ganglion cells which send down their axis cylinders through the degenerated area appear normal in the uninvolved portion of the cortex. The periganglionic cells may perhaps be more than usually numerous. In the lower layers as one approaches the degenerated area the ganglion cells become swollen and granular, the nucleus stains less sharply, and the cell processes, so definite in the higher layers, have been lost or disappear after a very short course, forming mere projections from the outline of the cell. Many such cells take on a rounded outline and appear now as large, irregularly rounded, granular cells with rather diffusely staining nucleus. Indeed, as in Fig. 2 (Plate I), such cells may be seen in the same field with their disintegrating processes which are slightly separated from the cell body; others still more degenerated have lost their nuclei. The much-degenerated cells lie in a tissue of

axis cylinders and neuroglia which is thickly sprinkled with globules of various sizes of high refractive index and staining faintly bluish with haematoxylin. In specimens stained by Weigert's method these globules take the typical myelin stain.

The axis cylinders are somewhat swollen and thick and show evidences of disintegration (Plate II, Fig. 3). They persist, however, fairly well into the completely necrotic substance, where they end abruptly. Throughout the degenerated area their myelin sheaths are broken up into the globules described above, many of which adhering to the axis cylinders give rise to the varicose appearances or bulbous swellings along the course of the fibril. In specimens prepared by Marchi's method such varicose beaded masses often stain black.

The neuroglia has also suffered severely. Traced by the aid of Mallory's special methods from the relatively normal cortex toward the centre of an area of softening, the dense matted felt-work of the outer region is seen to give place to a delicate network of finer deeply staining fibrils, which in their turn completely disappear further toward the centre, leaving the material there without any definite neuroglia stain and consisting of necrotic débris of cells and tissue without connecting supporting substance. Associated with this gradual disintegration of the neuroglia felt-work there are changes in the neuroglia cells. These lose the sharp contours of their nucleus, which comes to stain a diffuse greyish purple without any sharply stained chromatic particles; such nuclei become more and more indistinct and finally disintegrate.

Even more striking than these destructive degenerative changes in the nervous elements and the neuroglia cells and fibrils are the changes in the blood-vessels of the affected area.

It was stated above that examination of the vessels macroscopically and with scissors failed to reveal anywhere the presence of an occluding thrombus or embolus. Sections, too, made to pass through the blood vessels in those brains already hard-

ened when brought to the laboratory showed them to be filled only with blood. In the area of degeneration, however, wherever small vessels are left they may sometimes be found filled or partly filled with an elongated highly refractive hyaline mass, the free ends of which may be rounded off or pass over insensibly into the adjacent compressed and coalescing red blood-corpuses. Such hyaline formations have been found mainly in the smallest vessels and in the degenerated area. Sometimes the lumen is only partly filled and the hyaline material may show gaps in which lie red corpuscles (Plate IV, Fig. 6), or it may form a thick bluish-staining lining for the vessel in the lumen of which lie the red corpuscles.

The walls of the vessels in these areas show, however, extensive inflammatory changes. They are infiltrated (Plate III, Fig. 5) with cells of the type of the polymorphonuclear leucocyte for the most part, but occasionally mononuclear or so fragmented as to be difficult of diagnosis. This process affects arteries as well as the veins, and the infiltration extends throughout all the coats. The adventitial lymphatic sheath is in most cases distended and may contain masses of polynuclear and mononuclear cells with red corpuscles. Very often, however, this sheath contains only red corpuscles, but these in such numbers as to distend it to a diameter far greater than that of the blood-vessel. It seems most probable that this haemorrhage has occurred by diapedesis, constituting one of the evidences of inflammation, but here and there there are apparently evidences of the direct rupture of the wall of a small vessel. The distended lymph sheath may also rupture; at any rate, in nearly every case there is a zone of haemorrhage in the tissues round about it. Such extravasated red blood-corpuses, like those within the sheath and the blood-vessel, are in a good state of preservation, indicating the extreme acuteness of the process. There is nowhere any definite accumulation of haematoxin or haemosiderin to be found in the tissues or in the lymphatics—further evidence of the rapid course of the disease.

The small vessels lying in the centre of such haemorrhages

are very commonly such as are plugged with the rather blue-staining hyaline masses already described (Plate IV, Fig. 6). Other vessels may contain a similar hyaline material and indeed hyaline is often found both within and surrounding the vessel. Especially is this true in the case of some of the larger vessels lying within those meningeal processes which pass deep into the sulci. There the surrounding tissue is spread apart by the presence of this coagulated material.

The nature of the hyaline substance offers perhaps some difficulty of explanation. Leyden and Goldscheider* express themselves as follows :

Sometimes in oedema, softening or acute inflammation of the cord one finds in sections structureless amorphous masses. These occur in the central canal, in the grey substance, less often in the white matter, often about the vessels. This phenomenon is explained in various ways : by some thought to be coagulated albuminous or fibrinous exudate, by others interpreted as a colloid, hyaline, mucoid or gelatinous degeneration of softened nerve substance or swollen and diseased neuroglia. It is this structureless mass which Lockhart Clarke described as " granular or fluid disintegration." According to that author it consists in a softening and destruction of the nerve tissue and its change into a granular mass which, with the exuded fluid, mixes to form a homogeneous substance. These masses take the carmine stain very weakly. Their nature is not yet settled ; it is even questionable whether the material under discussion is everywhere the same. The perivascular masses are most probably exudate ; whether this will hold for all similar forms is, however, uncertain. The attempts to determine the nature of the substances by various stains have so far not been successful.

The problem before us is somewhat similar. The hyaline material within and about the meningeal vessels looks at times as if it had been produced by the coalescence of red corpuscles, but in general it is too abundant and homogeneous to be so explained. It is rather denser and more refractive than coagulated plasma would appear, and with water blue it stains brilliantly. In its general appearance and reaction it agrees fairly well with the larger hyaline masses in the areas of necrosis. Such hyaline material occurs also scattered about among the

* Die Erkrankungen des Rückenmarks und der Medulla oblongata, in Nothnagel's Spec. Path. u. Therap., Bd. X, Wien, 1897.

tissue elements, but nearly always about a vessel except in the most degenerated areas where the tissue becomes necrotic and entirely gives place to the structureless mass. There is even difficulty at times in outlining this necrotic substance from the hyaline material. Highly refractive as elsewhere it shows here, too, the tendency to contract and leave vacuoles, probably as the effect of the hardening reagent, so that the great central mass has, as a rule, an appearance almost like the cut surface of a Gruyère cheese (Plate II, Fig. 4). Often in such vacuoles a delicate coagulum can be made out, suggesting the presence there of a fluid of less density. The highly refractive substance is somewhat denser about the vacuoles. It is apparently very brittle in the sections and shows cracks and fissures here and there. It stains with eosin, taking a fairly bright pink color; Congo red tinges it brick red. Van Gieson's stain leaves it pinkish yellow—neither definitely red nor definitely yellow—with water blue and fuchsin it stands out sharply from the adjacent substance by its bright deep blue color; so also do the masses in and about the vessels. With Mallory's phosphotungstic acid haematoxylin it stains a rather pale purplish pink; with his modified stain for connective tissue as applied to the nervous system, it takes a dense deep purple color. With methylene blue, carbol fuchsin, Weigert's fibrin stain, etc., it is hardly tinged at all. Osmic acid does not stain it; in a Marchi preparation it is just visible as a smoky area.

The material stains therefore with acid dyes, in which respect (according to the hypothesis of P. Ernst) it corresponds to that form of hyaline derived from epithelial cells. Nervous elements being of epiblastic origin, might perhaps furnish the great mass of hyaline in the centre of the focus. There would be difficulty, however, in thus explaining the presence of a substance staining in exactly the same way in and about the arteries as well as the veins, and we must probably consider this one of the exceptions to the rule, as is the colloid of the thyroid which, although derived from epithelium, stains red with Van Gieson's stain.

In the smaller vessels in the neighborhood of the most intense degenerations the hyaline masses described above stain rather bluish with the haematoxylin and eosin stain, which seems to indicate that they are not quite identical in nature with the remaining hyaline substances described.

As stated above, the central hyaline mass in each focus is bounded by ragged edges of necrotic substance with here and there free islands of such tissue. Nowhere are there any evidences of the least pressure on this tissue, which becomes gradually rarefied toward the margin, where it quite disappears. This mass is, therefore, in all probability, the result of the breaking down of the brain substance—perhaps added to also by exudation of fluid from the vessels.

The exudation of leucocytes is not very abundant in the sections. Beside the infiltration of the walls of the small vessels and the tissue surrounding them, leucocytes are found sprinkled in considerable numbers through the most degenerated tissue in the focus where it borders upon the hyaline material. These leucocytes are easily distinguished by their sharp staining from the greyish purple degenerated neuroglia nuclei which persist there.

Besides the leucocytes there are a few somewhat larger round cells with small single round nucleus and granular protoplasm. These appear to be analogous to the fat granule cells which are so common in inflammatory diseases of the nervous system of longer standing, they are however rather scarce, and although in a Marchi preparation they can be made out to contain blackened fat droplets, they are by no means a prominent feature in the section.

The process is therefore predominantly a destructive rather than an exudative one. To resume, we have an acute disease, rapidly fatal, producing large areas of complete destruction of the brain substance in which the anatomical elements are disintegrated and largely replaced by a colloid-like material. In the neighborhood the blood-vessels are acutely inflamed, there is exudation of leucocytes into the vessel walls, and throughout the

adjacent tissue, with passage of the red corpuscles into the perivascular lymph sheath and into the adjacent tissues, these focal extravasations giving the inflammatory process its haemorrhagic character.

The various forms of acute haemorrhagic encephalitis in man, as described by Wernicke, Strümpell, Friedmann and others seem, as a rule, to progress less rapidly and to be much less violently destructive than this form. Anatomically, however, the conditions are analogous.

In horses the disease is apparently fairly well recognized. Friedberger and Fröhner,* giving the bibliography, summarize the results of investigation into the pathology of acute encephalitis about as follows :

Local non-purulent encephalitis occurs in irregular, round foci, mostly of the size of a pea to that of a hen's egg, sometimes even involving a whole lobe of the brain, but not sharply limited. At first the place is slightly diffusely reddened, this being soon followed by a swelling and softening from serous exudation, when, according to Schütz, the cells of the neuroglia and the ganglion cells are swollen and granular, and finally undergo fatty degeneration ; the axis cylinders are varicose and the glia tissue infiltrated with small cells. The focus undergoes maceration, swelling and liquefaction, resulting finally in a softened mass consisting of disintegrated and fatty glia and ganglion cells, leucocytes and free fat-globular cells, and is spoken of as simple inflammation of the brain or inflammatory softening of the brain, distinguishable from ischaemic encephalomalacia by the exudation of leucocytes. This may be all, but often there are complicating haemorrhages giving rise to haemorrhagic inflammation of the brain. With the decomposition of the haemoglobin in such a focus the color disappears gradually and becomes yellowish. Then, as the mass of disintegrated tissue and exudate becomes more fluid, there is formed either a grey gelatinous mass or cyst, or finally a scar arises.

This description would apply to the cases described above fairly well except that the gelatinous fluid mass appears only at the end where the process is on the way to healing, whereas in our cases the brain substance throughout a large focus is quickly

* Lehrb. d. spec. Path. u. Therap. d. Haustiere, Bd. ii, p. 79, 2te Aufl., Stuttgart, 1889.

reduced to a gelatinous, structureless mass of necrotic and hyaline material.

The single case of our series in which recovery from the disease had occurred showed in the frontal lobe of one hemisphere a depression which on section of the brain corresponded with an elongated, gray, translucent scar which ran deep into the substance of the brain. This microscopically showed only a loose granulation tissue with numerous cells resembling the fat granule cells. Of course, whether or not it was really the end product of such a condition as described above depends on the accuracy of the diagnosis, but as the symptoms are fairly characteristic and the scarred condition of the brain about what might be expected as the final result of the anatomical process, it seems probable that this was an instance of recovery from the affection here described.

Addendum.—Since the above was sent to press there has occurred another outbreak of the disease in southern Maryland in the course of which great numbers of horses have died. We were able to make three autopsies on animals in which the symptoms during life were such as are described above. The two horses when seen were comatose, while the third animal—a mule—had died after a short but violent delirium. As the horses were obviously dying they were killed, but the autopsies revealed no recognizable macroscopic lesion. Microscopically, however, the vessels in the substance of the brain show in many places an acute inflammatory affection of and around their walls, and here and there in their neighborhood there is infiltration of the tissue with mononuclear, polymorphonuclear and eosinophilic leucocytes. No widespread destruction such as that described for the previous cases was found in these cases, and it is clear that they represent an earlier stage of the affection than that described above.

Bacteriological examination in these cases led also to no satisfactory results. Cultures from the organs of the horses were sterile except for occasional obvious contaminations. A rabbit inoculated with an emulsion of the brain substance of the mule,

which had been dead 48 hours, died with a general infection with a bacillus probably of the hog-cholera group and very virulent to rabbits. Further study of this organism will be made, but it is not likely that it has any relation to the disease in question.

DESCRIPTION OF PLATES I, II, III AND IV.

PLATE I.

Fig. 1. Photograph of a section through part of a focus of encephalitis showing the disintegration of the white matter, and the central hyaline substance.

Fig. 2. Ganglion cells which are losing their processes and becoming rounded—steps toward their complete disintegration.

PLATE II.

Fig. 3. Nerve fibres undergoing degeneration. The myelin sheath forms droplets or varicosities along the axis cylinder. Other highly refractive droplets are scattered about in the tissue.

Fig. 4. Central portion of a large focus showing the margin of the necrotic material and the central hyaline substance with vacuoles.

PLATE III.

Fig. 5. Small vessel with cellular infiltration of the wall, the perivascular lymph sheath being distended with blood.

PLATE IV.

Fig. 6. Similar vessel with extravasation of blood into its lymph sheath. The vessel is partly filled with a hyaline material.

Fig. 7. Section of the brain, showing the entire area of disintegration. Such a well marked case is rarely seen.

PLATE I.



FIGURE 1.

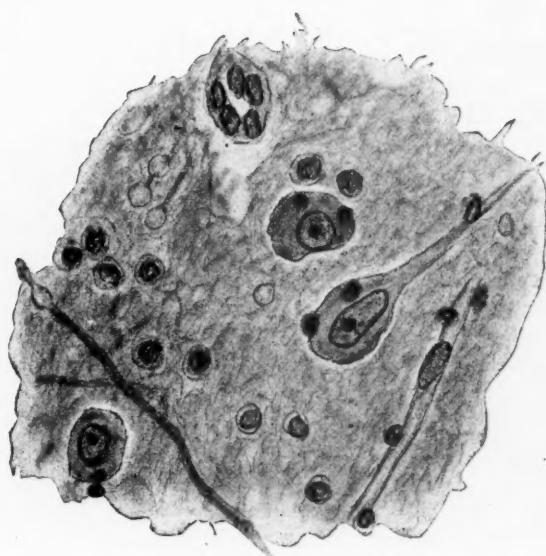


FIGURE 2.

PLATE II.

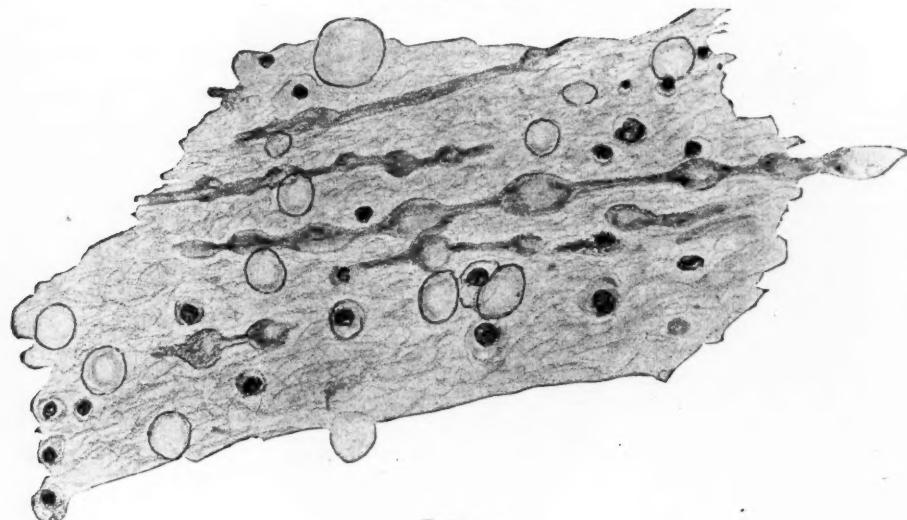


FIGURE 3.

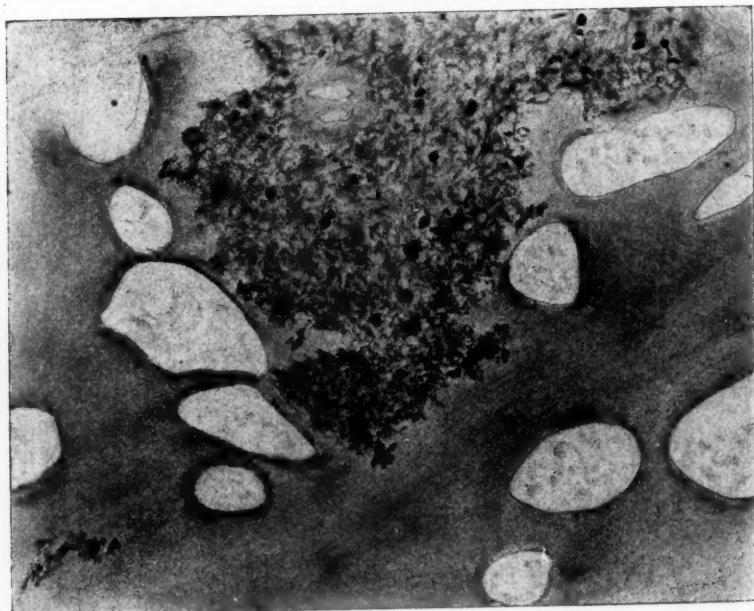


FIGURE 4.

PLATE III.

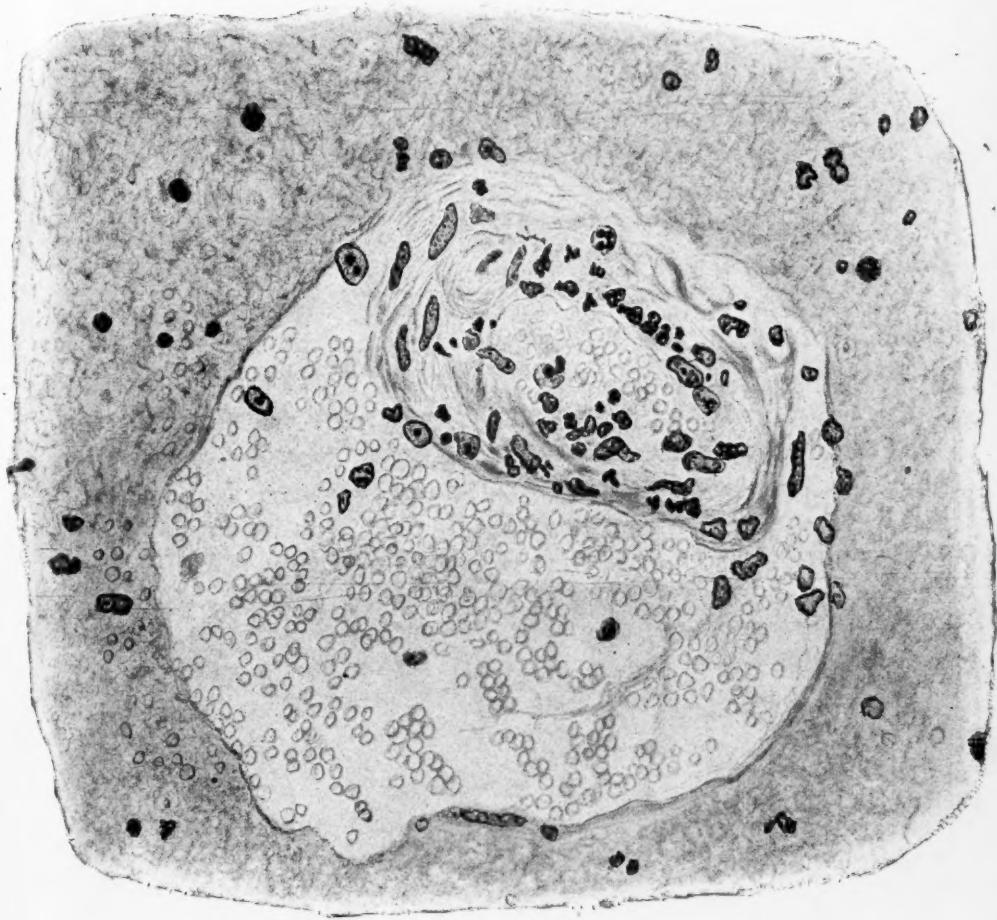


FIGURE 5.

PLATE IV.

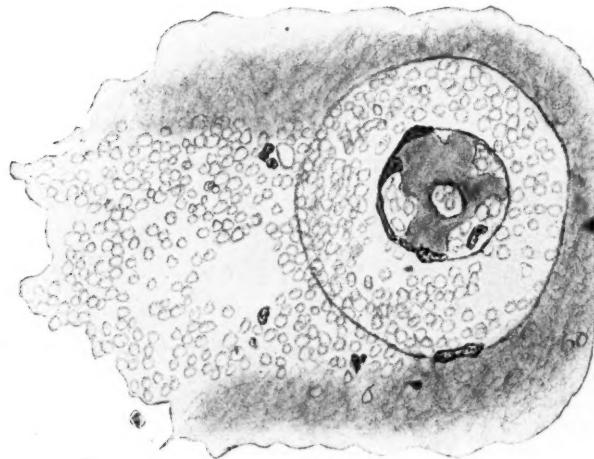


FIGURE 6.



FIGURE 7.

PARTURITION CASES.

BY WM. DRINKWATER, V. S.. MONTICELLO, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
Feb. 11 and 12, 1902.

From an experience of nearly twenty years as a veterinarian in dairy districts, the writer would give some of his ideas with regard to parturition cases which test the ingenuity of practitioners of veterinary surgery.

The writer would advise the keeping of the instruments and appliances used in these cases in a convenient place, and, when one of these urgent calls is to be attended to, no time will be lost looking for the outfit. The instruments preferred are a repeller, or crotch ; two hooks six inches long, one sharp and the other blunt pointed, each one with the eye for the rope made large enough to place a loop of rope through, thus avoiding the necessity of putting one cord in and pulling it through ; two curved embryotomy knives to cut by pulling toward the operator ; a saw to sever leg bones when they cannot be turned without risk of lacerating the uterus ; two small ropes each six feet long, sash cord preferred ; an injection pump ; a bottle of creolin, and a large piece of tar soap. The writer has, for cases where it is difficult to keep the patient in a standing position, or where the animal is lying down and needs to be raised, a set of pulleys, which consists of one double pulley to attach to a pole or beam overhead in the stable, and two single pulleys ; also, forty feet of rope one-half inch in diameter, rigged by passing twice through the double pulley and once to each single pulley which is attached to loops of rope passed inside of each thigh of the mare or cow. The last, and a very important part, is a pair of waterproof overalls, a pair of rubber overshoes, and an old coat with the sleeves cut off at the shoulders, with an elastic cord run around the armholes to draw them in, so as to protect the clothing of the operator.

We are called in only after the owner or some one else has failed to relieve the distressed animal and we must be prepared for hard work. It is usually well to dress for the operation first

of all, as when one gets started he may find what appears to be simple very difficult before he is done with it. First lather the hands and arms well with the tar soap and wash out the vagina and as much of the uterus and foetus as possible with a creolin douche by aid of the injection pump and examine carefully all around the foetus and walls of the uterus for any lacerations which may have been made by some one who has failed to relieve the dystokia. If a rupture or large laceration is found, inform the owner at once and advise him that further work is useless as it is a rare case that survives such lesions; but if he insists that you remove the foetus, this may be done, but no hope of recovery of the mother should be given.

What the difficulty with the foetus may be is for the operator to determine. He must use his best judgment in rectifying the position. He should be deliberate and careful in his action, avoiding too great haste. He should make every move count and use great care not to bruise, lacerate or rupture any of the parts of the mother. When ready to extract, the cords may be applied to the legs and considerable force used. If the foetus is dead, the hooks may be inserted where the firmest holds are found. When the foetus has been dead for a considerable time it is generally bloated and too large for extraction. Then the hooked knife may be passed up under each of the presenting legs, the skin ripped toward the operator, the hand pushed up under the skin separating it from the muscles, the rope attached and the limb pulled off the body. Sometimes the abdomen may be ripped open and the intestines removed to reduce the size of the foetus. If the reduction is made and most of the skin is left, it may be pulled into the vagina and ropes or hooks attached to the skin or solid parts and the bystanders may be given something to do. When removal is accomplished a pail of warm soft water with creolin enough added to make it quite white should be at hand and the uterus flooded. If the patient does not expel it in a few minutes, the hose can be taken off the injection pump, one end placed in the uterus and the other end dropped on the stable floor or gutter and the fluid thus siphoned

out. This may be repeated. If the placenta has not loosened enough to be removed, you may direct the owner to inform you if it is not expelled by the next day and you can return and remove and wash out the uterus again. Last of all to smear the vagina and sore parts with pure creolin.

The writer would not attempt to describe all the malpresentations and deformities that are met with in veterinary obstetrics and does not assume that he is an expert in parturition cases, but gives some of his ideas of the managing of these cases, and hopes to bring up some points for discussion which may be of benefit to the members of this association.

DISCUSSION.

Dr. Heck said that the removal of a putrid foetus is a very difficult operation. He questioned if the undertaking would not be facilitated by injecting into the foetus a quantity of a strong disinfecting and deodorizing substance as, for instance, formaldehyde or carbolic acid. He said that the injection of a carbolic acid solution into the uterus of a sow containing putrid foetuses will overcome the bad odor and render the foetuses much easier of removal.

Dr. D. H. Miller and *Dr. Scott* thought that creolin was not to be recommended for use as a uterine douche, as it is apt to bring on straining.

Dr. Lyford recommends the use of some bland oil, as linseed oil or cottonseed oil, in large quantities, to be pumped into the uterus and vagina in cases where the foetus is dry and hard to extract. One to three gallons may be needed. In one case he used 10 gallons. Raw eggs in large quantities make a good lubricant and may be used if available and expense does not forbid.

Dr. Scott uses lard in large quantities as a lubricant.

IN "Reports of Cases" this month, *Dr. H. C. Simpson*, of Denison, Iowa, tells about a case of "Chronic Atrophic Orchitis in a Bull," saying that the owner was advised to give one drachm of iodide of potassium twice a day until iodism was produced. We wonder how long it would take to produce such effects from that quantity.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his fact in building up the solid edifice of pathological science."

RUPTURE OF THE RIGHT AURICLE.

By C. E. BURCHSTEAD, M. D. V., Exeter, N. H.

On Jan. 25th, 1902, was called to see a gelding that fell during work (farm work); the owner gave the following history: Preceding the date of visit, about a year, had been breathing hard as though troubled with the heaves; for the last two weeks he would drop after working a short time. After lying a few moments, he would resume work again, but getting worse every time he was worked. These spells occurred at shorter intervals. The morning of my visit he had worked hauling wood for about two hours, when he went down. He had been stopped when they had found the spell coming on. Found him standing in yard eating hay, apparently well, with pulse smaller and weaker than normal. There was nothing to indicate a diseased condition of any organ, but they said that he had frothed and bled at the nose, the membranes of course being slightly congested, but the conjunctiva was rather paler than normal. Upon auscultation found nothing to lead to any pulmonary trouble, the heart showing no murmurs. Suspecting thrombus had the animal trotted, and in about five minutes he began to drag his hind quarters, in another moment syncope occurred and he fell. Examined pulse and found it bounding; dyspnoea and frothing at the nose; upon rectal manipulation found posterior aorta and iliac arteries full and bounding, no spasms of posterior limbs; observed that all superficial vessels were dilated and maxillary artery as large as small finger; visible membranes now injected. He arose to his feet without aid in about five minutes. I then auscultated lungs and heart; there was an hyper resonant sound of former, very forcible heart's action, but did not detect any murmur, intermittency, etc.; the cardinal symptoms of insufficiency, stenosis, and all that goes to identify organic trouble were undetected in my examination. I diagnosed some trouble in large vessels and possibly in pulmonary artery, or possibly aneurism, and gave a very grave prognosis and advised destruction. I asked owner if he wished any other advice, and he assured me he was satisfied with mine; told him that treatment

was useless. I asked him to let me know when the animal died, which he did on February 11.

Upon inquiring upon that visit, was told that he died that morning without much trouble, that he commenced to breathe heavily and fell, and with a few struggles he died. I repaired to make an autopsy with a few guesses up my sleeve. In opening up the abdominal cavity I found some ascites present; the intestines seemed to be oedematous, the liver enlarged, engorged and friable; the kidneys apparently from macroscopic view were normal. I then removed lungs and heart and found in thoracic cavity large quantities of fluid, similar to that found in abdominal cavity; in severing the large vessels I found ante-mortem clots in all as far as could be traced. The pericardium when opened gave vent to ante and post-mortem clots; in fact, all large vessels connecting heart showed these clots. In opening the left ventricle and auricle found the same condition; in opening the right ventricle and auricle they were found empty, probably due to an opening large enough to admit large finger in the right wall of auricle, the blood having passed into pericardium. This rupture was ragged and showed signs of degeneration of surrounding tissue apparently of long existence, the rent in the muscular coat being about three inches, the perforation being less than an inch. The lungs were found to be anaemic, and ante-mortem clots, in bronchi leading into parenchyma, when cut nothing but air escaping, froth in all larger bronchi; found stricture of cesophagus in thoracic third, which accounts for inappetance and length of time in consuming meals. Now, what was the cause of the rupture? What relation did stricture, if any, have to rupture? The condition of liver was probably due to venous stasis of the vena cava and sublobular and intralobular veins caused by regurgitation of blood from auricle, due to inability to contract and propel the blood into the right ventricle. By reason of disability of muscular coat, I might mention that there was oedema along the belly.

I regret that the incomplete autopsy makes this a clinical, more than a pathological report, though I found refuge in the autopsy. I have never been entirely satisfied with my diagnosis, though the former verifies my prognosis. I could find no indication of organic trouble in the heart as dilatation or hypertrophy to show any compensation (except pathological condition of liver), showing probably that the heart was in a eusystolic condition when at rest. Should like to hear of any similar case or would kindly accept any due criticism.

ANTHRAX IN A HORSE.*

By W. HAMILTON, V. S., Boone, Ia.

The subject of this report was a bay gelding, about 17 years old, in good condition, weighing about 1300 lbs., and having a previous history of good health. On November 9, 1901, the horse was noticed to be a little stiff in the left hind leg, but no swelling or fever was perceptible to the owner. Appetite was good up to the morning of the 10th. At this time the owner noticed that the animal was unable to stand around in the stall, and was terribly swollen over the left hip. About the centre of the swelling was a small round hole about the size of a puncture made by a shingle nail, from which was exuding a dark colored fluid mixed with gas and having the disagreeable odor of decaying tissue.

I arrived at the place about 11 o'clock, and found the subject standing on the barn floor with the left hind leg flexed at fetlock joint so that the front part of the joint was nearly touching the floor. There was a twitching of the muscles back of the shoulders and in the flank of the right side, and a peculiarly anxious expression of the face. Temperature was 103° F., pulse 70 and wiry. At intervals of from five to twenty minutes there was violent straining as if to expel either water or faeces, although there had been natural passages previous to the straining. The swelling over the left hip extended from the anterior border of the ilium to the hock joint and was cold and insensible. I made a couple of deep incisions in the swelling, but could not discern the least evidence that this gave him any pain. The swelling resembled the swelling of blackleg in cattle, only it was more tense and the crackling of air under the skin could not be induced by pressure, although there was gas escaping from the hole before described and from the incisions made by the knife along with the dark red liquid, which was of a very disagreeable odor. About 3 o'clock in the afternoon the horse sank to the ground and lay flat upon the side most of the time, except when the spells of tenesmus would come on, when once or twice he got up on the front legs, but never made any attempt to raise himself behind. He continued about the same until 7 o'clock of the 10th, when he succumbed.

There was no treatment of any kind prescribed. On the 11th I went to the place with the intention of making a careful post-mortem examination, but the smell and surroundings were

* Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association, Feb. 11 and 12, 1902.

almost unbearable, so I was content with a very superficial examination. The external appearance was much the same all over the body as the left hind leg had been the day previous, the swelling extending over the entire body, the skin being so tense as to cause it to rupture on the median line and around the rectum and sheath. After putting on rubber gloves I opened the body along the median line. There was considerable serum in the connective tissue; the kidneys were very soft and almost ready to break down. The spleen was very much enlarged for two-thirds of its length and dark colored. I removed and took away with me a piece of the spleen and the liver. From the blood squeezed out of the spleen I inoculated a rabbit, which died in less than 24 hours, and also prepared two specimens for the microscope. These were colored with methylene blue. Both Dr. Lindahl, a physician of Boone, and myself examined them and were satisfied that there were present plenty of anthrax bacilli.

DISCUSSION.

Dr. Gibson said the symptoms described were not those of anthrax, and that he could not accept the diagnosis of anthrax. At the request of a member he described briefly the symptoms of anthrax in the horse as seen by himself.

Dr. C. E. Stewart reported a very interesting experience with anthrax within the past two years. Two years ago eleven cows and twenty hogs died suddenly. On investigation he made a diagnosis of anthrax. These animals were infected by feeding in a pasture over which a cow which had died suddenly of what he supposed was anthrax had been dragged. He vaccinated the other animals on the farm and the disease did not spread further. Last year a cow died of what he supposes was anthrax. The carcass was allowed to lie unburied in the pasture. Later four horses were put into the pasture. They made a resting place of the spot where the carcass had lain. Within a short time they all became sick, showed symptoms of anthrax and died within a day. Three dogs that had eaten of the carcasses took sick and two of them died.

CHRONIC ATROPHIC ORCHITIS IN A BULL.*

By H. C. SIMPSON, D. V. S., Denison, Ia.

In the spring of 1901 I was called to see a valuable bull, 10th Laird of Estill, property of Mr. McHenry. Accompanied by

* Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association, Feb. 11 and 12, 1902.

Dr. Gibson I examined the animal and found the left side of the scrotum enlarged. It was about eight inches in diameter at the base, and on warm days it was said to hang nearly to the ground; was hard, tense, and not tender to pressure. The right side of the scrotum and the right testicle appeared normal, except that it also was hanging somewhat lower, the other side pulling it down.

The cause assigned for this condition was that the bull was supposed to have been kicked by a negro attendant about one year previous. The animal had been shown the previous summer with this enlarged testicle at a number of State fairs and had won continuously, but the condition was fast becoming worse and it was evident that something had to be done. On account of the value of 10th Laird, Mr. McHenry having paid \$1200 for him, we hesitated about advising castration, as neither of us had heard of a case where the animal's usefulness as a sire was preserved after removal of one testicle, so at that time we advised iodide of potassium, one dram twice daily until iodism was produced, the administration then to be discontinued and resumed again shortly. No corn was to be fed while under treatment. Also an iodine ointment was to be applied twice daily externally and well rubbed in. The ointment was made by rubbing up the iodine crystals in sulphuric ether and then mixing with lard. This form of medication was given a thorough trial, but with no good results that we could see, so it was decided to operate. The animal was prepared by dieting a few days. Owing to his size and weight, 2100 pounds, we were at a loss to know how to cast him, but finally decided to use an ordinary casting harness and side lines. In addition to this we looped a rope around his body, all of which came in handy, as the animal broke the harness. There was plenty of help, but he gave all of us a tussle before he went down. The scrotum and surrounding parts were thoroughly disinfected with a chloro-naphtholeum solution. The instruments were immersed in a bucket of the same solution. A puncture was made through the skin near the body and a trocar and canula inserted full length toward the external inguinal ring, but nothing was found. The skin was normal, but the subjacent tissues were very much thickened, there being $1\frac{1}{2}$ inches of newly formed tissue to go through before reaching testicle. The connective tissue around the testicle was broken down with the hands. One end of the ecraseur chain was put around the cord as high up as possible, and after rendering it fairly tight, the cord, which was over one

inch in diameter, was ligated. Then the chain was loosened and slipped down toward the testicle a short distance and again tightened until the cord was cut in two. Afterwards all loose tissue was removed, the wound was washed out thoroughly, packed with cotton saturated in chloro-naphtholeum solution, and the animal allowed to rise. After-treatment consisted in daily flushing out with chloro-naphtholeum solution. The wound healed well. The other side of the scrotum has contracted to normal shape and a person seeing the bull now would never know that anything had been wrong with him. In regard to his breeding, it may be said that he had sired four good, strong, healthy calves before being operated upon. Last autumn after the operation he served a number of cows, and has apparently impregnated them all, as none have come into heat since being served.

The testicle was packed in a box with ice and shipped to Dr. Repp at Iowa State College, who has examined it and can give the results of his examination.

DISCUSSION.

Dr. Meiman said that he has under his care a bull suffering in a way similar to Dr. Simpson's case, but that he has not been able to obtain the owner's consent to castration.

Dr. Repp described the microscopic appearance of the testicle and the capsule of connective tissue surrounding it. He stated that the disease was neither actinomycosis nor tuberculosis.

Dr. Gibson described the operation, saying it was much more difficult than castration when the testicles are normal.

Dr. Heck said that a steer under his care suffered from a necrotic process involving the sheath and skin of the abdomen which he thought was induced by foulness of the sheath. As a result the sheath and an area of skin about fifteen inches in diameter became separated and was cast off. This mass weighed over 30 pounds. The wound healed and the steer was sent to market in good condition a month later. The scar was hardly noticeable.

Dr. C. E. Stewart had a similar case.

Dr. D. H. Miller related an experience with abscess of the sheath of a bull which extended to the testicles and set up an acute orchitis. Relief was had by opening the abscess.

TETANUS—ANTITOXINE—DEATH.

By C. E. SHAW, D. V. M., Brooklyn, N. Y.

The patient was a bay gelding, nine years old, weighing

about ten hundred pounds, used as a police saddle horse, in the practice of Dr. Roscoe R. Bell. Feb. 9th we were called to see the animal, which was said to be suffering from colic. This impression was given by the patient pawing, in the stall. On arrival I found the well marked symptoms of tetanus, trismus included. Temperature and pulse were subnormal, profuse salivation, head extended and a little to one side, stiff awkward gait, with hocks turned out and tail curved. Membrana nictitans partially projecting. On careful examination no wound could be found, nor was there history of previous injury. The patient was placed in a darkened stall and the surroundings made as quiet as possible. He did not show much nervous excitement however. 30 cc. of tetanus antitoxine injected at 6 o'clock P. M.

Feb. 10th, patient about the same; pulse, 45; respiration, 60. 30 cc. of antitoxine injected at 11 o'clock A. M.

Feb. 11, patient growing weaker and more restless and unsteady on his feet. Continued to suck up oatmeal gruel. Injection per rectum given of glycerine dilute. 30 cc. antitoxine injected at 10 A. M.

Feb. 12, patient more restless; pulse weaker; respiration, 64 and labored. 30 cc. antitoxine injected.

Patient died 11 P. M.

While our efforts resulted in a glowing failure, it seems only fair that they should be reported, in view of the fact that too often the publicity of such results are buried, if possible, with the patient.

ACUTE STRINGHALT.

By C. E. SHAW, D. V. M., Brooklyn, N. Y.

The patient was a bay gelding, eight years old, weighing about eleven hundred pounds, in good hard working condition, being used for coach purposes in a livery stable. In the evening he was taken with stringhalt symptoms so severe that, without relief, the animal would have been absolutely worthless. Even at a slow walk either hind foot would be drawn to the abdomen and brought down with terrific force. The patient being of a nervous temperament and the previous day's work having been performed on very slippery streets, the owner was informed that the malady might be temporary and pass off as suddenly as it had appeared. Otherwise, the operation of peroneal tenotomy was advised.

The animal was given a bolus of aloes, 3 viij, nuc. vom.,

3 j, and as soon as he became nauseated from the effects of the physic, the symptoms of stringhalt entirely disappeared and he was put to work in a few days, healthy as before.

While this particular solitary case does not prove nor disprove nor throw much light upon a subject so obscure at the best, I would bring it before the readers as contributing towards the theory of nervous irritability as a cause of stringhalt. And if it is a nervous affection I would inquire, why does peroneal tenotomy cure so many chronic cases?

LEUCOCYTHEMIA LESIONS OF THE SPLEEN.

Dr. Samuel S. Buckley, veterinarian to the Maryland Agricultural Experiment Station, College Park, Md., reports a case and forwards the accompanying photo of the spleen from a case of leucocytethmia from a large mare, following an old attack of lymphangitis.

[We beg leave to say to REVIEW readers that we shall be glad to reproduce photographs of interesting specimens which they will send us, since they are a great aid to the clear understanding of reports of cases occurring in practice.—EDITORS.]



DEPARTMENT OF SURGERY.

BY L. A. AND E. MERILLAT,

Chicago Veterinary College, 2537-39 State Street, Chicago, Ill.

ANTISEPTIC AND ASEPTIC PROTECTIVE DRESSING FOR WOUNDS.

BY G. W. KNORR.

I. General Principles Governing Antiseptic and Aseptic Dressings.—After learning the main principles governing the modern aseptic methods of performing operations, we come to the question of what dressings should be used for covering the wounds, and the discussion of the methods of applying surgical dressings. It is a part of surgical technique which requires indefatigable diligence and care, a correct application of dressing,

and a carefully conducted after-treatment of those who have been operated on, or wounded, are matters of great importance.

As we are aware that all infection of wounds is caused by micro-organisms, by the omnipresent bacteria, it follows that we should conduct the after-treatment in such a way so as to preserve it from damaging effects of, or rather produced by, micro-organisms, and with the same care that is used in performing an aseptic operation.

The surest and simplest way of preventing subsequent infection in a clean aseptic wound, such as one resulting from an operation, is to cover it if convenient, or environments of wound will allow, with a germ-free dressing, which has been sterilized by hot steam or formaldehyde sterilizer. In ordinary practice dressings are much used which have been impregnated with antiseptics like carbolic acid and mercury bichloride. That method is, however, the best which offers the greatest security against subsequent infection and most readily carries off and absorbs the discharge from the wound. We should and sometimes do, but not too often, operate without exception, according to the rules of *asepsis*, and consequently the same preventive measures should be carried out in the after-treatment of the wound until it is entirely healed. Infected wounds are to be cleansed as perfectly as possible from any dirt or foreign body which may be present, and are best disinfected by a 1-1000 solution of mercury bichloride.

The Most Common Antiseptic and Aseptic Treatment for Wounds.—The modern surgeon uses particularly:

(1) Antiseptic solutions for cleansing the wound and for disinfecting the materials used in dressings. The most suitable are three to five per cent. solutions of carbolic acid, and an aqueous solution of mercury bichloride 1-1000-5000. He also uses antiseptic powders, such as iodoform, dermatol, bismuth, and naphthaline, for dusting over wounds, especially if they have the form of a cavity, or are not closed by sutures, or are already suppurating or granulating.

Instead of antiseptic solutions, sterile salt solution and sterile water are used upon the wounds.

(2) Absorbent material, such as unstarched gauze, mull, jute and cotton from which all fatty matter has been extracted. These are sterilized by subjecting same to steam heat at a temperature of 100°-130° C. in a sterilizing apparatus. The dressing materials impregnated with antiseptics, like carbolized and bichloride gauze, were formerly in very general use; but

it is cheaper and still simpler in sterilizing them by heating as has just been described, at a temperature of $100^{\circ}-120^{\circ}$ C. in appa. Moreover, it has been proved that dressing materials impregnated with antiseptics and kept in dry condition do not remain sterile, but after a certain time all sorts of bacteria have been cultivated by them (Schlauge, Ehlers, and others).

The surgeon no more uses for dressing wounds the material charpie, which was formerly much in vogue, and consisted of bundles of thread made by pulling to pieces bits of linen cloth. This material "charpie" has caused much harm ; it was full of dirt and wound poisons, and so consequently has killed many a patient by exciting suppuration and various wound diseases. The dressing materials are fastened in place by ordinary cotton bandages, better if they were *mullin* a 3% phenol or 1-500-1000. Hg. Cl. Solution, and if possible gauze bandages applied over these. The bandages subsequently dry and causes the whole dressing to form a firm, well-fitting support. When it is necessary to immobilize an extremity, the dressing may be strengthened by adding splints of wood, metal, wire, or thin pliable hoop.

Of the numerous material used for aseptic and antiseptic dressing, the following list are some of the most common in use to-day, but more so in the human than in the domesticated animals, but owing to the expensiveness of some, only a very few are brought within the reach of the ordinary veterinarian, unless in canine practice and expensive or valuable animals.

Mull or Gauze.—The most extensively employed material is soft unfinished gauze or mull. This is most excellent for dressings, most often used in the smaller animals, being a very good absorbent. It is usually impregnated with antiseptic solutions, particularly mercury bichloride, acid carbolic, and iodoform. Other and cheaper materials are recommended as substitutes for the more expensive mulls ; these are jute, moss, prepared moss, wood wool, etc.

Cotton.—This is not suitable for placing in direct contact with wounds, as it does not sufficiently absorb the secretions of same, and allows it to collect and decompose beneath same. It is considered a good practice at all times : first to cover wound with a thick layer of sterilized *gauze*, and secondly to cover this with a layer of *cotton* ; this at all times proves to be satisfactory.

Lint.—This is rapidly losing its good qualities which at one time it attained, but even at the present time is very good, as where used as boric lint.

Jute.—This, also called Indian hemp, consists of the woody

fibres of corchoms. It is an elegant substitute for cotton. Flax, peat cotton, moss, and moss felt are very seldom used in veterinary practice.

Wood wool seems to gain the favor of some practitioners. This consists of wood which has been rubbed into small particles by a grindstone. This material has great powers of absorption, is soft, light, and cheap. This material is most often used, as when packed in gauze sacks. These dressings are most remarkable for their great absorptive powers and they can be left in place on large wounds for 2 or 3 weeks when the secretion of same will become dry in that time. This is always covered with a gauze dressing.

Wood fibre, wood wadding, marly scraps, and paper-wool are also used, but to no great extent.

The Different Antiseptics.—Of the various antiseptics which are employed in the treatment of wounds and for dressing purposes, carbolic acid and bichloride of mercury are most widely used. Since the introduction of asepsis the employment of antiseptics has diminished a great deal.

Carbolic Acid or Phenol ($C_6 H_6 O$).—It is very poisonous to animals and plants, used in strengths of $2\frac{1}{2}$ –3 per cent. aqueous solutions, for cleansing wounds, disinfecting instruments, etc. The 5 per cent. solution is used in wounds already affected. At present we avoid washing out a wound with 3 or 5 per cent. solution of phenol, an operation which was formerly very much in vogue, as we now know it is unnecessary and even dangerous in large wounds. *Gangrene* may easily result from their use.

Bichloride of Mercury ($Hy. Cl_2$). is one of the oldest drugs, and Koch showed that $Hy. Cl_2$, even in the solution of 1 to 330,000 prevented the growth of anthrax *bacilli*, and a solution of 1-1000-5000 almost instantly kill the spores. It being so poisonous, was at first looked upon with suspicion by surgeons, but now it is a great favorite among surgeons. It is most always used in disinfecting the field of operation, the hands, and the wounds in aqueous solution in from 1-1000-5000. It has besides its marked antiseptic qualities the advantage of being cheaper than phenol. It is not recommended for the disinfection of instruments, as we have seen, and for these a 3 per cent. solution of phenol is preferable. If solution has been made with ordinary water, an insoluble preparation of *Hy.* will soon form, which is thrown down by the alkaline carbonates in the water. To avoid this it has been recommended by some to use an addition of acids, especially salicylic, tartaric, and hydro-

chloric. The addition of am. muriate and sodium chloride is most preferred. Besides these two potent antiseptics, it has been recommended to use salicylic acid, acetate of aluminum, thymol, zinc chloride, boric acid, boric ointment, aseptin, bismuth and iodoform.

Iodoform ($C H I_3$) is a bright yellow crystalline powder, almost insoluble in water, acids, and alkalies, but readily soluble in ether, chloroform, alcohol, volatile oils and fats. It is a most potent antiseptic and is left to the judgment of the practitioner.

Substitutes of iodoform are as follows :

Iodoformin, iodoformol, iodoformogen, iodol, salubrol, salol, europhen, aristol, dermatol, orthoform, napthaïn, benzoic acid, sulpho-carbolate of zinc, alcohol, terebene, eucalyptus, iodine, creolin, peroxide of hydrogen, lysol, solveol, ichthylol, alumol.

Which antiseptics and which antiseptic dressing are the best ?

Their number is without limit, and the choice, as we have remarked, is more or less a matter of taste. But the great principle involved remains the same, namely, that the operation must be conducted with the strictest attention to asepsis, and that the arrest of the haemorrhage, the drainage, and the suturing of wounds should all be carried out with greatest care. The fate of the patient who has been operated upon depends very largely upon whether the operation has been performed aseptically or not. The dressing that is put on the wound has no longer the importance which at one time was attached to it. It should consist of freshly sterilized material which has good absorptive power, gauze, cotton, moss, wood wool. All materials should be sterilized by steam at a temperature of 100° - 130° C. for twenty or thirty minutes in steam sterilizer. Dressings which have been impregnated with antiseptics become, after a time, less aseptic, and, furthermore, produce irritation of skin, and cause *eczema*. The wound, or suture line, is covered with several layers of sterilized gauze, or iodoform gauze, over this is placed cotton which has been sterilized by steam at a temperature of 100 C. (212 F.). The less the wound is irritated by antiseptics, or, in other words, the drier the operation, so much the less is the subsequent secretion from the wound, and there is consequently less need of dressing having great absorptive powers like moss pulp, etc.

All dry antiseptics are better than wet, occlusive variety, as the latter are apt to occasion an *eczema*, frequently lasting a good while, and increase the danger of poisoning, particularly from

phenol and Hy. Clr. solutions, but at times we may find that wet antiseptics are the thing especially for contused and suppurating wounds. Never apply iodoform, bismuth, salicylic, or boric acid to a wound which has been sutured. Dry powders are chiefly indicated in wounds which have not been closed by sutures, and for those which are granulating and suppurating. Open wounds are often packed with sterile or iodoform gauze, and then closed by sutures from 2 to 4 days after removing after packing.

For an ointment I prefer boric acid and plain vaseline.

[N. B.—"Surgery of the Eye, Ear, and Upper Air-Passages" will be continued in May number.—(L. A. M.)]

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

CONGENITAL INFECTION OF THE FœTUS IN CASES OF HÆMORRHAGIC SEPTICÆMIA.—Grijns in his work on hæmorrhagic septicæmia, reports the following: At the autopsy of two East Indian buffaloes, which suffered from the mentioned disease, each of the uteri contained a fœtus. Examining the same they showed pathological changes similar to those of the mother animals. In both cases the pericardium and the pleural sac contained a serous exudate. Under the pericardium and subpleura a great number of small blood extravasations were noticeable. The mucous membrane of the trachea and larynx was dark red in color; the submucosa manifested many hæmorrhages from the size of a pin's head to a rice seed. In both cases the typical small bipolaric rods were successfully proven. With all this, the diagnosis was confirmed by test inoculations.—(*Berl. Thierarzt. Woch.*)

TRANSMISSION OF TUBERCULOSIS.—Two butchers of the Berlin city abattoir, who were employed in transporting tuberculous cattle from the killing room to the collecting room of confiscated parts, proved on medical examination to be affected with skin tuberculosis (lupus).—(*Berl. Thierarzt. Woch.*)

CONGENITAL TUBERCULOSIS IN TWIN CALVES.—Zincke, as he reports in the *Rundschau*, examined the seven months old twin foetuses of a cow, which proved to be in an advanced state

of tuberculosis; the uterus also being affected. In one of the foetuses Z. found in the liver, also in the portal and bronchial glands, tubercles, which in the centre manifested caseous degeneration. In the second calf, outside of the organs mentioned in the first case, there was an infection of the mesenteric glands. The bacteriological examination revealed the presence of tubercle bacilli, which on inoculating test animals, produced tuberculosis. The infection Z. believes was transmitted from the tuberculous mucous membrane of the uterus, and therefore the tuberculosis may be considered as a placental or a phacogenic form.—(*Berl. Thierarzt. Woch.*)

AMPUTATION OF A UTERUS HORN IN A SO-CALLED PRO-LAPSE OF THE UTERUS [*Zoroastro*].—Z. found a cow which shortly before calved, with prolapse of the right horn of the uterus. As the organ was perforated and gangrenous, Z. undertook the amputation of the same, by ligating the part close under the vulva and replacing the stump. The cow during the following eight days showed uneasiness and gave less milk, but soon completely recovered.—(*La Clin. Vet.*)

SUPPURATIVE INFLAMMATION OF THE GUTTURAL POUCHES IN A HORSE, WITH A PERFORATION OF THE RIGHT TYMPANUM [*Durante Luca*].—The described case is of interest on account of its peculiarity, there being outside of the manifestations of the disorder a discharge of a slimy-purulent matter from the right ear. This could be artificially produced by pressing on the right guttural pouch. Treatment consisted in opening, draining, and irrigating the guttural pouch. An uneventful recovery took place.—[*Il Nuovo Ercolani*.]

THE "MAL DE CADERAS" OF HORSES IN SOUTH AMERICA [*O. Voges, Buenos Ayres*].—1. "Mal de Caderas" is a horse-sickness which occurs in the interior of South America; southwards it extends to the Argentine provinces, St. Fé and Corrientes; northwards it appears in the territories of Chaco, Misiones, Paraguay, Matto Grosso, and Bolivia. 2. In the wet, rainy season, the disease often appears with extraordinary violence, while in the dry season it almost disappears. 3. The disease attacks the horse, mule and ass, also the carpincho (waterhog). The percentage of this affection varies to a great extent, but it is almost unfailable that every affected animal succumbs. 5. The epizoötic, also clinical observations of this disease, were published by Rebourger and Leclerc. Malbrun and Zabala observed the highly infectious condition of the blood. The disease always runs a chronic course; the duration

in the horse is from two to five months, in the ass and mule from six to twelve months. 7. The clinical symptoms are: Fever with intermissions, slow emaciation, periodically haemoglobinuria. Towards the termination of the disease a sort of paraplegia manifests itself (hence the name "mal de caderas"), so that the animal shows a staggering, dragging gait. In the course of the disease, the number of the red blood corpuscles become enormously diminished; the same way is reduced the sensibility of the animal. On section there is an enlargement of the spleen and lymph-glands, also changes in the spinal cord. 8. The blood in every state of the disease contains the exciting cause. Leclerc mentions as cause a sort of bacterium coli. Blood abstracted in a strictly sterile way, does not contain bacteria of any kind; also cultures in all the employed media remain sterile for over a year, notwithstanding the blood is infectious. 9. The disease is transmissible by inoculations, if using only a fraction of a drop of blood. Through ingestion the disease cannot be produced. In the laboratory (during three years) spontaneous infections were observed. 10. The adoption appears justified, that the transmission takes place through a blood-sucking medium. The same lives very likely only in the infected districts, as a spread of the epizoötic to other countries was not observed. The transmitter so far is unknown. 11. The disease can be transmitted by inoculations of the blood to all known domestic and laboratory animals, causing death in white and gray mice, white and gray rats, rabbits (seldom guinea-pigs), dogs, goats, sheep, hens, ducks, apes, etc. 12. As cause of the disease the author discovered a living organism which belongs to the line of the trypanosomas, and which is named by the author as *trypanosoma equina*. This trypanosoma may be distinguished from other trypanosomas. 13. The author succeeded in dyeing this trypanosoma with Romanovsky's dyeing method and to study its development. The same has a double nucleus similar to rat trypanosoma. In different animals this trypanosoma appears periodically, almost disappearing at certain periods. 14. Experiments were performed to treat the horses with therapeutic agents used in other blood infectious diseases, such as metylen blue, arsenic, enterol, permanganate of potass., etc., without succeeding in saving one of the diseased animals. 15. The phenomenon of agglutination was observed in the suspended drop, but this is by no means specific, as the same result may be obtained from different normal sera. The author will report the relation of the trypanosoma to spe-

cific serums in another publication, as it is rather difficult to give a sufficiently plain description in a short thesis.—(*Berl. Thierarzt. Woch.*) [Very extensive and interesting investigations of this disease were published by the French bacteriologist, Dr. L. Elmassian, who made a careful study of the disease in Paraguay. Regarding its cause, pathology, etc., he came to the same conclusion as Dr. Voges.—A. E.]

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

FOREIGN BODY IN HORSE'S TONGUE [*A. Peele, M.R.C.V.S.*].—Any addition to the history of foreign bodies in the organism is always interesting and of value. The author recalls three cases of their presence in horse's tongue. A first case that of a cart horse, which was off his food. Examining his teeth, the tongue is observed bluish in color and swollen towards the left side at the base. On manipulating it the doctor pricked his finger, and extracted a piece of wire $2\frac{1}{2}$ inches. In a second case, a hard swelling was found on the left side of the tongue of a mare which would not eat, and slobbered at the mouth. Again another piece of wire, two inches long, was found in the tongue. In a third case, with somewhat similar history and similar symptoms, there was removed from the tongue an old darning needle with the point bent and the eye broken. These three cases carry an important indication, viz., not to overlook minute examinations of the tongue in cases where symptoms of interrupted mastication or similar disturbances may be manifested.—(*Veterin. Journal.*)

FOREIGN SUBSTANCE IN A HORSE'S MOUTH [*Arthur New, M. R. C. V. S.*].—Under this title the author records the history of a horse which was brought to him because of his not eating, and which was slobbering at the mouth. On examining this cavity he found wedged between the fourth molars a piece of wood $4\frac{1}{2}$ inches long and $1\frac{1}{2}$ wide, which, on being removed, cured the horse. Mr. N. adds: "The case is, I think, rare in horses, never having seen a similar one.—(*Vet. Record.*) [It is strange, but a very similar case was published by Dr. O'Donnell in 1886, and recorded in Vol. X, page 368, of the AMERICAN VETERINARY REVIEW. In this animal the foreign body occupied the same location, between the 4th molars.—A. L.).] [And, stranger yet, an identical case occurred in my

practice two years ago.—(R. R. B.)]. * * * * In the same class of foreign bodies can be recorded that of E. H. Pratt, who tells of a mare which was left tied to a hedge for a little while after dinner. She worked well during the afternoon, but when home at night she was unable to eat. On examination, a briar was found in the median line of the posterior part of the mouth, apparently partly swallowed. It was necessary to cast the animal to extract it. It measured 18 inches in length and was about as thick as a lead pencil. It carried lots of thorns curved in the wrong direction for its extraction and doing harm.—(Vet. Record.)

INTRACEREBRAL INJECTION OF ANTITETANINE FOR THE CURE OF TETANUS IN THE HORSE [Sydney Villar, F. R. C. V. S.].—This records two successful applications of the treatment, one in a subacute, the other in a very acute case. The former, a trick pony belonging to a traveling circus, had been sick and gradually growing worse since nine days. At that time, after careful antiseptic measures the cranium was trephined on the right side, about one inch from the median line, and 3 cc. of pure antitetanine were injected into the substance of the cerebral hemisphere. No immediate effects were noticed. After twenty-four hours "there was a marked abatement of the tetanic symptoms, and during the next ten days the symptoms gradually diminished and ultimately disappeared." The second case was a hunter, which manifested tetanus 21 days after receiving a punctured wound of one hind leg. On the third day from the appearance of the disease 8 cc. of pure antitetanine were pushed into the cranial contents to a depth of 2 inches. Immediately after a severe nervous crisis occurred, which lasted five minutes and passed off. The next day, the tetanic symptoms had considerably diminished and recovery set in gradually without any other bad effects. In other cases the author proposes to inject both hemispheres to shorten the time of recovery.—(Journ. Comp. Path. and Therap.)

COMPOUND FRACTURE OF THE SCAPULA—SUCCESSFUL REMOVAL OF THE DETACHED SPINE [R. Lewis Green, M. R. C. V. S.].—A chestnut cob, driven to a phæton, was run into by a horse and cart, and the shaft entering the muscles of the shoulder fractured the scapula, detaching a piece of it extending from about two inches above the cavity up to the cartilage of prolongation. Removal of the loose piece was decided upon, and done with much difficulty on account of firm attachments of the muscle, which to be overcome required a great deal of force. The

author, however, succeeded and cut off a piece of the scapula measuring $9\frac{3}{4}$ inches in length and 3 in width. The supraspinous spine of the scapula had also sustained a fracture. It was separated from the principal mass much easier; it measured 4 inches by $1\frac{3}{4}$. The large gap left was plugged with cyanide gauze, dusted with boric acid and sprinkled with chinosol and closed with three sutures. No suppuration being formed after 48 hours, the dressing was renewed and the wound dressed afterward with antiseptic lotions, bichlorid of mercury $\frac{1}{1000}$, carbolic acid, $\frac{1}{20}$. Granulations went on well and without complications; the pony was soon able to resume work, first with a breast collar and after six weeks with his ordinary harness. (*Journ. Comp. Path. and Therap.*)

INTESTINAL OBSTRUCTION CAUSED BY TUMOR [*A. Peele M. R. C. V. S.*].—A half-bred mare, left in good condition at night, was found the next morning suffering acutely with abdominal pain, straining, etc. Rectal examination failed to detect anything except that the bowels seemed to become constricted as the hand was introduced. Treatment of aloes, tincture of opium, and chlorodyne, with rectal injections, was prescribed; but the mare gradually sank and died. At post-mortem an enormous tumor was found in the sub-lumbar region, to which the intestines were somewhat adherent. The tumor weighed about 20 pounds, and consisted of a network of fibrous tissue enveloping fat. The lowest part of the tumor was very prominent and fluctuating. There were here and there blood vessels, and in the lower portion of the mass there was a quart of bloody serum. The animal had been three years in the possession of the owner and had never been sick. The author thinks he ought to have detected the tumor in making examination per rectum.—(*Veterin. Journal.*) [So do we!]

BIBLIOGRAPHY.

TUBERCULOSIS OF CATTLE, AND THE PENNSYLVANIA PLAN FOR ITS REPRESSION. By Leonard Pearson, B.S., V.M.D., State Veterinarian, and M. P. Ravenel, M.D.

This is bulletin No. 75, issued by the Department of Agriculture of the Commonwealth of Pennsylvania, and is one of the most complete documents on the subject which has been written by a State Veterinarian in the United States. Dr. Pearson is well known by all of us, we know his energy, his ability, and the earnestness with which he works, and of the honesty

with which he accomplishes his duties, and those qualities are sufficient vouchers for the conscientiousness with which the bulletin has been written. His collaborator, Dr. M. P. Ravenel, is also well known among veterinarians, and the parts which he has treated in the report are most valuable contributions, especially at the present time, when the subject of Koch's new theory is in the minds of all those who are interested in tuberculosis; and who in the medical and veterinary world is not?

The report of Drs. Pearson and Ravenel is divided into ten chapters.

After entering into the *general considerations* by Chapter I, the following one takes hold of the *cause of tuberculosis and of the influences that govern its spread*. Its primary cause is the *tubercle bacillus*, and anything that facilitates its entrance into the organism of an animal or bring animals into condition more favorable to its growth is a secondary or accessory cause of tuberculosis.

Chapter III relates to a subject which is the order of the times: *Relation of bovine tuberculosis to public health*. This is by Dr. Ravenel. For those who have read on the subject, many parts of this chapter are already familiar, at least here I have had the good fortune to read them. Remarks on the work of Willemin, the experiments of Chauveau, of Cohnheim, the discovery of Koch, etc., are subjects that no veterinarian can be ignorant of.

In Chapter IV, the *disposition of the flesh of tubercular cattle* is considered, and after remarks on the flesh containing tubercle bacilli, how tuberculosis spreads in the body, after giving the regulations of Prussia, Bavaria, Saxony and England and some of those in Pennsylvania, a summary says: *Tubercular cattle should be very carefully examined at the time of slaughter and the disposition of the flesh should depend upon the character and extent of the lesions that are found*.

Chapters V and VI are again due to Dr. Ravenel. In the first the author considers the *morbid anatomy*. Human tuberculosis first, and then bovine, with its peculiar form of grape disease, are examined. And in Chapter VI we enter into the scientific work of the *Bacteriology of Tuberculosis*. The description of the bacillus, its biological history, tuberculosis of birds, that of fish, the original tuberculin and the newer as well as the oxytuberculin of American discovery, all form a very interesting part.

Chapter VII gives the *generation and symptoms of tuber-*

culosis, and is followed by Chapter VIII on the *recognition of tuberculosis in living cattle* and the *tuberculin test*. We do not know if there are still people in the United States who can object to the tuberculin test, but if there are the reading of this chapter will quickly convince them of their folly.

Chapter IX treats of the *prevention and suppression of tuberculosis of cattle* (the important question of the day for all agricultural countries). In his summary Dr. Pearson says: "The various measures to rid herds of tuberculosis may be classed under four heads: (1) by improved and salubrious conditions of life; the suppression by good sanitary conditions; but it is not practicable, nor is it safe to rely upon it; (2) the suppression by good sanitary conditions with removal from the herd of all animals with physical signs of the disease. So long as this method was relied on, tuberculosis spread rapidly in all parts of the world that it had reached; (3) the suppression by removal of tubercular animals as detected by physical examination and tuberculin test. The removal of the diseased cattle is followed by disinfection and improved sanitation. The Danish system and the Pennsylvania plans come under this heading; (4) the suppression by quarantining infected and exposed cattle and rearing their progeny in separate herds, thus raising a new sound herd while the old one dies off in time and the disease with it; but, as Prof. Bang says, *owners of cattle ought to prevent the contamination of calves and other animals still healthy*.

In this chapter the measures in general are considered: compulsory methods, voluntary measures, and the methods of various European countries, with those of various States in the Union.

Chapter X treats of the *Pennsylvania plan to control the disease*, and is followed by reports from herd owners on their losses from tuberculosis and the condition of infected herds.

An appendix on *Tuberculosis of Cattle*, by Prof. B. Bang, of Copenhagen, closes the bulletin.

* * *

Through the kindness of State Veterinarian Leonard Pearson, we have received also bulletin No. 74, on the *Repression of Tuberculosis of Cattle by Sanitation*; and also bulletin No. 79 on *Rabies*, by Dr. M. P. Ravenel, the Bacteriologist of the State Live Stock Sanitary Board of Pennsylvania. Its perusal will prove very interesting to veterinarians, as it treats extensively

of all points connected with rabies, its history, cause, varieties of type, rabies of man, dogs, cats, horses, cows, birds, prevention, eradication, etc.

A. L.

AMERICAN VETERINARY MEDICAL ASSOCIATION : Proceedings of the Session of 1901.
Edited by the Publication Committee, M. H. Reynolds, Chairman.

Progress marks everything connected with the American veterinary profession, not excepting the publication of the proceedings of its national organization. Reaching its members a little later than for several years past, through no fault of the committee, it repays the recipients by being superior to any that they have ever received, in the quality and quantity of its contents, while the work of the printers is of a much higher grade than ever before. The association can well feel proud of this volume, for it is by far the most pretentious work of the kind issued probably in the world. As a library volume it is of great value to its possessor, and renders the work of the convention at Atlantic City doubly valuable to those who attended by being placed in permanent form for study and reference, and gives a dignity and worth to the events which could be secured in no other way. Chairman Reynolds is entitled to the plaudits of the whole profession for the success which has crowned his very arduous and earnest work.

OBITUARY.

LOXLA EDWARDS, D. V. S.

Dr. Edwards, assistant to Dr. C. Barnwell Robinson, of Washington, D. C., died on Feb. 25, at Dr. Robinson's residence, 222 C Street, N. W., of pneumonia, after an illness of four weeks. He was a graduate of the United States College of Veterinary Surgeons, class of 1901, his home being at Opelika, Ala. He was a young man of great promise in his profession, was 27 years old, and unmarried. His body was taken to Alabama by his parents, and the remains were escorted to the depot by the students of his *alma mater*.

The following resolutions were adopted by the members of the Washington Veterinary Association in memory of their late friend and fellow, Dr. Loxla Edwards :

WHEREAS, The Good God has deemed it wise and expedient to take from our midst our esteemed and honored colleague, Dr. Edwards, late Assistant and House Surgeon of the United States College of Veterinary Surgeons, Washington, D. C.

Resolved, That by the death of Dr. Loxla Edwards, we lose a most

earnest and devoted member of the profession. Suddenly, when life seemed brightest and health vigorous and permanent, in the twinkling of an eye, his soul passed into eternity, and his life, so filled with hopes of usefulness, sank to struggle no more with earth's waves and billows. His life was a truly noble one, and the loss is irreparable.

Resolved, That to the family of our deceased member we extend our heartfelt sympathy, earnestly praying that in this sad bereavement they may find consolation in the belief that he has joined his Creator within the Portal Gates of Heaven.

Resolved, That a copy of these resolutions be spread on the minutes of this association and a copy be forwarded to the bereaved family.

MORRIS H. WALMER,
DR. J. C. HEIDE,
ADAM FISCHER, } Committee.

CORRESPONDENCE.

THE NEW YORK STATE DEPARTMENT OF HEALTH WANTS TUMOR SPECIMENS.

NEW YORK STATE DEPARTMENT OF HEALTH,
CANCER LABORATORY OF BUFFALO,
BUFFALO, N. Y., March 3, 1902.

Editors American Veterinary Review :

DEAR SIRS :—The staff of this Laboratory are very anxious to secure from all possible sources, live animals, especially the smaller and more manageable ones, with malignant tumors. For this purpose rats, dogs, rabbits and fowl are most desired. We realize that success in transplantation experiments is to be attained, at least at present, only among animals of the same species. I therefore beg you to insert in your valuable journal, a request for cases of this kind and would beg that animals presenting lesions of this character be sent to us in suitable form, directed to Dr. H. R. Gaylord at our Laboratory, 113 High St., Buffalo, N. Y. We will cheerfully pay the expense of transmission and will even be willing to pay for the animals when peculiarly interesting specimens may thus be obtained. It is necessary, however, for our work, that they reach us while still alive.

If you will kindly give this request a prominent place in your journal, I assure you you will do us a great favor, as well as a benefit to comparative pathology, in which we are all interested.

Thanking you for this favor, in advance, I am

Very respectfully yours,

ROSWELL PARK, *Director*.

COLLEGE COMMENCEMENTS.

KANSAS CITY VETERINARY COLLEGE.

The eleventh annual commencement exercises of this popular institution were held in the College Hall, 1404 Holmes Street, Kansas City, Mo., March 12, at 7.30 P. M., when the following gentlemen received diplomas: James B. Boazman, James M. Lawrence, James Mahon, E. Manford Nighbert, Henry R. McNally, Robert A. Phillips, Erni V. Robnett, Morey A. Sappington, Frank M. Starr, Orville A. Stingley, Fred W. Weston, and Zachary Veldhuis, D. V. S. (post-graduate). The faculty address was delivered by Hon. J. A. McLane, the diplomas were presented by Dr. R. C. Moore, the class response by Dr. James Mahon, while the exercises were interspersed by delightful instrumental and vocal solos by young ladies, an innovation which has become very popular with the college the past session. The hall was filled to overflowing with the friends of the students and college, and proved a very enjoyable and interesting occasion.

On the 6th ult. the college gave its annual dinner to the students, faculty and friends, the spread including about 140 plates. The *menu* was very pleasantly and acceptably served, Dr. R. C. Moore acting as toastmaster, and the following toasts were responded to: "Ethics," Hon. J. A. McLane; "Three Years," Fred W. Weston; "The Middle of the Way," Lloyd Champlain; "Freshmen," Chas. E. Wiggins; "K. C. V. C. Alumni," Dr. B. F. Kaupp; "The Pathogenic Germ," Dr. I. J. Wolf; "The Bureau of Animal Industry," Dr. A. G. G. Richardson; "The Veterinary Profession from a Layman's Point of View," Hon. Alfred Weston; "The K. C. V. C." Dr. S. Stewart.

DR. GEDDES, representative of the United States Department of Agriculture, resident in England, tested during the past year 249 Herefords with tuberculin prior to export. Of this large number only seven reacted, and it is stated that of these seven he considered three only "suspicious cases."

DR. JOSEPH H. RAYMOND, Assistant Sanitary Superintendent, New York City, has invited the leading veterinarians of Brooklyn to meet at the Hoagland laboratory, April 3d, to discuss and coöperate in measures affecting the public health. We mentioned recently that Dr. Raymond was the first health officer in America to appoint a veterinarian upon his staff, and he should have the hearty support of the profession.

SOCIETY MEETINGS.

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT OF THE PROCEEDINGS OF THE FOURTEENTH ANNUAL MEETING HELD AT DES MOINES, IOWA, FEB.

11 AND 12, 1902.

FEBRUARY 11TH--FIRST DAY--MORNING SESSION.

The meeting was called to order at 9.45 A. M., in Parlor I, Savery Hotel, by the President, Dr. P. O. Koto, of Forest City.

The Secretary announced that a system of card registration had been substituted for roll-call.

The Secretary read the minutes of the thirteenth annual meeting, which were approved as read.

The President delivered his address, which was replete with interesting and instructive thoughts.

The Secretary read his report as follows:

SECRETARY'S REPORT.

*"Mr. President and Members:—*It is by reason of the removal of Dr. John E. Brown from Iowa and his consequent resignation from the office of secretary of this association that I now make the report of the secretary. The impaired health of Mrs. Brown necessitated the removal of Dr. Brown and family to a more equitable climate. Chattanooga, Tennessee, was chosen as the most eligible place of residence, and it is in that city that the family now have their home. I have not the slightest doubt that I give expression to the feeling of all of you when I say that I greatly regret that it has been necessary for Dr. Brown to remove from Iowa and to sever his connection with this association as an active member and as its secretary. For eight years he served as secretary and treasurer of the Iowa State Veterinary Medical Association. During all of this time his services have been so generously and unselfishly devoted to the interests of the organization that he has won a warm place in the hearts of all its members and has always merited and received their praise. The present standing of this organization is due in a large measure to Dr. Brown's well directed efforts. It is no easy task to take up and continue satisfactorily a work that has so prospered in the hands of the one who relinquishes it. It was, therefore, with reluctance that I assumed the duties of secretary, *pro tempore*, last October at the request of the President, Dr. P. O. Koto.

"Owing to the fact that Dr. Brown had a considerable part of the books and papers of the association packed with his goods, and that this goods was delayed in shipment to Chattanooga, the part of the material of the association which was useful in carrying forward the work of the secretary, did not reach me until Dec. 9th last, and, as a consequence, the work of getting up the program and arranging for the meeting was delayed. For that reason the meeting is held later this year than is customary.

"On November 9th I sent out to each member a circular letter asking for contributions to the program of this meeting. As this was done in advance of receiviuig the list of members, and as I had to depend upon my memory of who were and who were not members, in mailing the letter, twenty-six members were missed. These members were reached by a subsequent communication after the list of members came into my hands.

"After receiving the books containing the accounts with the members, I sent to each member a statement of his account. This was done December 14th. In order to make more effective the attempt at collection, I had a new form printed. The upper half of this form has printed upon it the directions to the members concerning the remittance and the article of the by-laws which covers the matter of membership fees and dues. The lower half contains the blank form for statement of account. These two halves are separated by perforations, so that the lower half may be torn off and sent with the remittance to be received by the treasurer, returned to the member, and held by him as his receipt. I believe all of the members have been given an opportunity to see this form.

"On January 1st I found that the responses to my request for papers had not been liberal enough to insure a well filled program, so at that time I sent out to a number of members whom I thought would give their help, a personal request for a paper or report of a case. From this appeal I got enough favorable replies to make the program what you see it to-day.

"I would observe at this point that the majority of the members are not ready enough to supply a paper or report to the program. This keeps the secretary in a constant state of anxiety lest the time for the meeting arrive without an adequate program. You are all aware that the meeting would be an absolute failure but for the papers and reports submitted. In fact, without these it would hardly be necessary to have a meeting at all. It could in any event be only a business meeting. It is

equally well known that the secretary, without the coöperation of the members, is a helpless and useless part of the machinery of the association. Why then should it be made for him such a difficult task to secure contributions to the program? Will you not wake up to a proper realization of the urgency and importance of replying to these requests of your secretary and even before this meeting comes to an end may the secretary not have promise of a paper or report of a case from a goodly number of you? You can decide in the period which intervenes between now and the next meeting what subject you will write upon.

"On looking up the records it was found that 12 veterinarians still residing in the State were once members but have been suspended for non-payment of dues. A letter with which was enclosed statement of dues owing at time of suspension, was sent to each of these asking him to pay his arrears and apply for reinstatement. A few replies were received, which will be referred to at another time.

"To each of several members who have left the State but who are in arrears in their dues a letter was sent with enclosure of statement of arrears, requesting that these arrears be paid and that application be made for reinstatement to membership. The responses to these requests will be referred to at another time.

"On January, 7, 1902, as near as I was able to learn, there were in the State 57 graduated veterinarians who are not members of the Iowa State Veterinary Medical Association. A few of these had been members at one time but had resigned. To each of these was sent a circular letter urging him to make application for membership. Accompanying this was sent a blank application form. I thought best to get out a new form for this purpose. The old form was very unhandy and somewhat antiquated and the supply had been pretty well exhausted. In this new form the printing is all on one page and the slip is of such size that it can easily be filed without folding. The entire substance will, in this way, be in such form that it can be taken in at a glance. It is divided into four sections. First, there is set forth the article of the constitution governing the matter of membership together with some instructions. Second, there is a blank application form. Third, there is a blank for report of board of censors. Fourth, there is a blank form for report of the secretary on the result of the ballot of the association upon the candidate. To this date 8 applications for membership have been received by the secretary. This number will, I hope, be greatly increased during this meeting. I

would observe here that it is rather surprising that more veterinarians are not awake to the great advantages of membership in our State organization. A member not only has the consciousness that he is strengthening himself by uniting with others in this way, but, also, the consciousness that he and his associates are elevating the profession of veterinary medicine, and bringing it to the attention of the laity, and in this way commanding their commendation of our noble pursuit. A veterinarian cannot do better for himself or for his profession than to carry an honorable membership in a State veterinary organization. It is to be hoped that all the members will unite in an effort to bring every eligible veterinarian in the State within the bounds of our association.

"On January 17th the program and the announcement for this meeting were mailed to each veterinarian in the State whether a member or not, and to each honorary member. Also, a copy of each was sent to each of several prominent newspapers and agricultural journals with the request that they be used as subject matter for the news columns. This request was complied with in every case that I was able to trace.

"In addition to this a general correspondence has been kept up with various members and others when occasion required. I would like to say here that the secretary would be pleased to have a letter from each member and veterinarian not a member at least once a year. I regret to say that this pleasure has not been had during my incumbency to date.

"I would call your attention to the following statement:

"Veterinarians in Iowa,	155
"Resigned from membership in the I.S.V.M.A.,	7
(In State 3, out of State 4 (?).)	
"Suspended from membership,	39
(In State 17, out of State 22.)	
"Honorary members,	10
(In State 1, out of State 9.)	
"Active members,	98
(In State 76, out of State 22.)	
"Active members in good standing,	62
(a) With dues paid up to and including 1902	27
(b) With " " " " " 1901	21
(c) With dues paid up to and including 1900	14
"Members not in good standing,	36
(a) Only three years in arrears	7
(b) " four " " "	2

(c) Only five years in arrears	4
(d) " six " " "	6
(e) " seven " " "	7
(f) " eight " " "	10

" As the sum required for yearly dues is only one dollar, it is no small wonder that so many would allow themselves to fall into delinquency. I am glad to say, however, that my attempts at collection have been quite successful thus far. It is probable that if statements were regularly sent, the members would have their attention directed to the fact that they really owe the association something and that they would be more prompt in payment. This plan should be given a thorough test.

" I would refer briefly to Article IV of the By-Laws as amended at the 1897 meeting, which reads as follows: Each member, on being admitted to membership, shall pay the sum of two dollars, and shall annually thereafter pay one dollar in advance to the Association. And any member in arrears more than two years shall be suspended until said arrears are paid.

" It seems to me that the words ' shall be suspended ' in themselves work a suspension when a member has fallen into arrears more than two years; or, at least, these words make suspension compulsory on the part of the association. If a member were suspended when he comes into arrears as much as three years, and it were generally known that he would be so suspended, I doubt if many would allow themselves to become delinquent to such an extent. At all events, if the member were promptly suspended at that time, his dues would not accrue any further and he would never be called upon to pay more than three dollars back dues in order to secure reinstatement. Under such conditions he would be much more likely to pay up arrears and ask for reinstatement than if his dues were allowed to accrue for five or six years or longer. This is a matter upon which the association should take some action at this meeting.

" Following is a statement of the finances covering the period of my incumbency from October 1, 1901, to February 10, 1902:

Receipts.

" Cash from J. E. Brown	\$66.57
" Refund Am. Exp. Co.	1.35
" Cash for dues for 1902	26.00
" " " back dues	35.75
" Membership fees	12.00
	———— \$141.67

Disbursements.

" Express	\$ 2.00
" Stationery	17.90
" Blanks	3.50
" Stamps	15.50
" Telegrams	.90
" Announcements	1.50
" Programs	3.00
" Badges and express	14.20
" Secretary's expense	14.62
" Cards	2.25
	<u>\$75.37</u>

" Balance handed to the Treasurer \$66.30

" I desire to return my thanks to all those who have so willingly assisted the secretary in his work during the preparation for this meeting.
Respectfully submitted,

" JOHN J. REPP, *Secretary pro tempore.*"

The Treasurer submitted the following report:

TREASURER'S REPORT.

Fourteenth Annual Meeting, Feb. 11, 1902.

I.

FOR JOHN E. BROWN.

Receipts.

" Cash on hand from 12th Annual Meeting	\$78.80
" Cash for dues for 13th Annual Meeting	38.50
" Cash for membership fees	8.00
	<u>\$125.30</u>

Disbursements.

" Presentation of canes	\$33.55
" Hall rent, 13th Annual Meeting	5.00
" Secretary's expense	10.38
" Postage	1.00
" Stationery	1.25
" Paper	.35
" Stenography	1.25
" Express Oskaloosa to Ames	1.10
" Express Waynesville to Ames	1.35
" Letter heads	3.50
	<u>\$58.73</u>
" Balance to John J. Repp	\$66.57

II.

FOR SELF.

Receipts.

“ Cash from John E. Brown	\$66.57
“ Refund American Express Co.	1.35
“ Cash for dues for 14th Annual Meeting	26.00
“ Cash for back dues	35.75
“ Cash for membership fees	12.00
	———— \$141.67

Disbursements.

“ Express	\$ 2.00
“ Stationery	17.90
“ Blanks	3.50
“ Stamps	15.50
“ Telegrams	.90
“ Announcements	1.50
“ Programs	3.00
“ Badges and express	14.20
“ Secretary’s expense	14.62
“ Cards	2.25
	———— \$75.37
“ Balance in Treasurer’s hands	\$66.30

“ Respectfully submitted,

“ JOHN J. REPP, *Treasurer pro tempore.*”

The following committee was appointed to audit the Treasurer’s accounts: Dr. H. L. Stewart, Dr. C. A. Clinton, Dr. Geo. M. Walrod.

The auditing committee made the following report:

REPORT OF AUDITING COMMITTEE.

“ DES MOINES, IOWA, Feb. 11, 1902.

“ We, the Auditing Committee for the Fourteenth Annual Meeting of the Iowa State Veterinary Medical Association, hereby certify that we have examined the above account of the Treasurer, and that we find it correct.

“ GEO. M. WALROD,
“ C. A. CLINTON,
“ H. L. STEWART. } *Auditing Committee.*”

By vote of the association, the report was accepted.

The Secretary read communications from various members, and others. Of especial interest was the following from Dr. John

E. Brown, of Chattanooga, Tenn., former Secretary of the association :

"CHATTANOOGA, TENN., Jan. 28, 1902.

"To My Dear Old Friends and Members of the Iowa State Veterinary Medical Association :

"GENTLEMEN:—The announcement and most excellent program of the next annual meeting of the association to be held on Feb. 11th and 12th is before me.

"I can scarcely bring myself to realize that my position, geographically, is so remote from you that henceforth I must be deprived of the exceeding pleasure of attending these meetings. That I can no longer be, in person, one of you with whom it was my privilege to mingle so pleasantly and so profitably for so many years, is to me a matter of very deep regret.

"Side by side we have worked together for the advancement of the various interests of our profession without a hitch, and I cherish the thought that after all these years I can think of each and every member as a warm personal friend as well as co-operator in association matters. While it is true, I am temporarily, through force of circumstances, out of practice, I am still in the true sense of the term a veterinarian, and your interests are mine. I hope to live to see the day when the veterinary profession will be honored and appreciated just as much as any other, and will then rejoice as heartily as any one. Simply treating the sick and injured horses, cattle and other animals is not the highest calling of the profession. That far it is looked upon more as a trade with a financial basis of valuation. Just as soon as the people learn that veterinarians stand for higher sanitary conditions—conditions which mean better health and more happiness to the human race as well as to the lower animals—and the veterinary profession proves that its members are true, educated, scientific sanitarians, then, but not until then, will the profession enjoy the high respect, confidence and power socially and professionally, that every progressive veterinarian knows it should. Iowa in the years past has made a beautiful start in the right direction in this respect. She has set a noteworthy pace for her sister States to follow. I do not fear that in the years to come she will fall behind the pace she has already set.

"The North and West are far better suited to veterinary practice than the South. The ratio of opportunities for veterinarians in the North and the South is about ten to one in favor of the former. The stock interests here are undeveloped. As

a rule the stock seen through the country is very inferior both in quantity and in quality as compared with the Northern and Western States. There is a gradual improvement in the stock interests throughout the South, and sooner or later a fertile field for veterinarians will open.

"We as a family are greatly enjoying the modified winter temperatures, and are passing the winter with decidedly improved health. While we do, and long will, miss the familiar faces and cheery 'hellos' of our Iowa friends, these changes go a long way toward making us like our new home 'way down in Dixie.'

"And now, my friends, while it becomes my unpleasant duty to present my resignation as Secretary and active worker in the Iowa State Veterinary Medical Association, in spirit I will still be with you, especially on Feb. 11th and 12th. I shall cherish the kindest remembrances of the association and will ever rejoice in any and all of its achievements.

"In a parting word I would, if I could, inspire each Iowa veterinarian with a still greater interest in the State association and loyalty to its interests. Combine your efforts, concentrate your forces, permit naught but harmony in your ranks, and your progress will mean success. Also, let me bespeak for my successor in office the same loyal, courteous treatment you have always accorded to me.

"Long may you prosper. Remember my latchstring is out to any member who may ever happen to journey this way.

"Ever yours, with best wishes, J. E. BROWN."

Dr. Gibson moved that a special committee of three be appointed by the President to draft resolutions in regard to Dr. John E. Brown, former secretary of the association. This motion prevailed.

The President appointed the following committee: Dr. J. I. Gibson, Dr. John J. Repp, Dr. Geo. A. Scott.

The Board of Censors reported favorably upon the following applicants for membership: Dr. G. L. Buffington, Baxter; Dr. N. A. Kippen, Riceville; Dr. F. F. Parker, Oskaloosa; Dr. J. S. Potter, Iowa City; Dr. John V. Jewell, Le Mars.

The President appointed as tellers Dr. S. H. Kingery and Dr. C. E. Stewart.

On ballot by the association the following were elected to active membership: Dr. G. L. Buffington, Dr. N. A. Kippen, Dr. F. F. Parker, Dr. J. S. Potter.

On motion the ballot on the application of Dr. John V. Jewell was postponed indefinitely because no one was present who knew Dr. Jewell well enough to inform the members fully in regard to him. Adjournment was taken to 1:30 P. M.

FEBRUARY 11—FIRST DAY—AFTERNOON SESSION.

Meeting called to order by President Koto at 1:30 P. M.

New business was taken up.

The Secretary moved that all members three years or more in arrears in dues be suspended until all back dues are paid. Seconded by Dr. Kingery. The Secretary then explained that this motion was in accordance with the provision of Article IV of the by-laws of the association.

Dr. Walrod moved to amend the motion so as to exclude from suspension all those who would pay their dues before adjournment of the meeting for the afternoon. This amendment was duly seconded, put to a vote, and carried.

On vote the motion as amended was adopted. The Secretary then read a list of thirty-six members to whom this action would apply.

Dr. Clinton moved to instruct the Secretary to send a registered communication to each member suspended notifying him of his suspension and stating that all back dues must be paid before he could be reinstated. This was seconded, put to a vote and adopted.

On motion Dr. John E. Brown, Chattanooga, Tennessee, and Dr. H. E. Titus, Lafayette, Ind., both active members with dues paid up, were elected to honorary membership for the period during which they reside outside of the State.

Dr. Kingery moved that suspended members who desire reinstatement must, after paying back dues, apply for reinstatement and that the application must be submitted to a vote of the association by ballot; seconded by Dr. Clinton, put to a vote, and carried.

In the absence of the author the Secretary read Dr. Hamilton's report of "A Case of Anthrax in a Horse."*

As Dr. Simpson was not present his report on "Chronic Atrophic Orchitis in a Bull"** was read by Dr. Kingery.

The Board of Censors reported favorably upon the following applications for membership: Dr. A. B. Wilmot, Des Moines; Dr. A. A. Adamson, Newton; Dr. T. F. McEvers, Colfax.

* Published in the department of "Reports of Cases" in this number.

The President appointed as tellers Dr. C. E. Stewart and Dr. P. Malcolm.

On ballot of the association the following were elected to active membership : Dr. A. B. Wilmoth, Dr. A. A. Adamson and Dr. T. F. McEvers.

The Secretary moved to reinstate Dr. W. A. McClanahan, who had been suspended for non-payment of dues, to active membership.

On ballot of the association Dr. McClanahan was reinstated.

On motion, the association went into secret session.

Dr. Repp moved that the non-graduate practitioners be given no more recognition than any other visitors. Seconded.

After some discussion, Dr. Austin moved to amend so as to extend an invitation to all except registered non-graduates to attend the meetings. This was fully debated and on vote was defeated. The original motion was then voted upon and carried. At 6:30, on motion, adjournment was taken to 8 P. M.

FEBRUARY 11—FIRST DAY—EVENING SESSION.

Called to order by President Koto at 8:30 P. M.

The President appointed Dr. J. I. Gibson and Dr. Geo. A. Scott to fill vacancies on Committee on Resolutions, due to the absence of Dr. G. E. Noble and Dr. Wm. Hamilton.

The report of the Committee on Sanitation was then made by the Chairman, Dr. T. A. Shipley.

REPORT OF COMMITTEE ON SANITATION.

“ By way of introduction, or explanation, of this report its chairman wishes to state that no effort has been made to advance any new or original ideas on this subject, but that the committee has gathered from contemporary veterinary literature and personal observation a few of what seemed to be the most pertinent facts and theories as applied to present local conditions.

“ The work has all been done in the last three weeks. It was arranged, at the suggestion of your worthy Secretary, to give Dr. Miller the ground covering State and municipal meat inspection. His plan of work was to send out about twenty letters to each of the cities and to some of the more important towns of our State with the following questions :

“ 1. How many slaughtering establishments have you, not including those having federal government inspection ?

“ 2. How many are within the city limits ?

" 3. Give approximate number of animals slaughtered annually.

" 4. Are all of these animals inspected before and at the time of slaughter by a city official?

" 5. What are the qualifications of the inspector?

" 6. What disposition is made of the condemned parts and carcasses?

" He states that only a few replies have been received and that they were very slow in coming in—the usual fate of such inquiries so far as I am able to determine. In fact there is no means whereby any statistics of this nature can be gathered. His report is inserted verbatim in the body of this report. To Dr. Gillian was assigned the task of reporting on State and municipal milk inspection. His report was placed in my hands yesterday, Feb. 10, and will be read as given. Your chairman then had left for his consideration the State control of contagious diseases and the laws regulating this work. A word in passing may be devoted to a consideration of the relations these sustain, or should sustain, to those of our sister States and those of the federal government. We have no instantaneous, sure-shot, cut-and-dried remedy to recommend for the cure of all the ills that ignorance and contempt of sanitary law engender. We are also willing to concede in the broad field of sanitary science the relative importance of the work of the regular physician, the sanitary engineer, the bacteriologist, the chemist, and all others engaged in any branch of the complicated work of the modern sanitarian, even to our friend, the original surgeon, the barber, in his legal attempts to assure us that he is shaving us with a clean razor. Certain it is that the keystone of progress in modern medicine is prevention rather than cure. We believe that all sanitary work should be concentrated into national, State and local boards of health which work together harmoniously and that this work should be directed by these boards. Also, that any State or municipal sanitary laws, rules or regulations should as far as possible supplement or augment the federal system already established and should not entail any unnecessary hardships or inconveniences upon those directly concerned.

" It is almost self-evident that no State with our modern methods of commercial activity and free exchange of all commodities, can of itself protect all its interests from invasion from without and from enemies within without the help of the general government. And, indeed, after conceding all that the general government has done, or is willing and able to do, there

will still be enough left to keep all trained sanitarians busy at work for the remainder of our natural lives at least.

"Municipal Meat Inspection."—To ascertain what is being done in municipal meat inspection your committee sent out a letter of inquiry to the board of health of each city and some of the more important towns of our State. Only five or six replies have been received. These are, however, from places that may be considered a fair average of the whole, as they are among the representative cities of the State.

"All have slaughtering-houses varying in number from two to five, some of which are situated within the city limits. We have not been able to ascertain the number of animals slaughtered annually, but it is safe to state that the aggregate number would amount to many thousands, yet the answers received would indicate that none of these animals are inspected either before or at the time of slaughter. That there are some diseased animals among all of these and parts of carcasses that should be condemned, there is no doubt, but nobody has any knowledge of what disposition is made of them, or to what use they are put. We can imagine, however!"

"One reply indicated that the subject had been discussed, but that no action had been taken.

"The great majority of our people are not aware of the necessity of this inspection. The danger of a contaminated meat supply is best known to veterinarians and it is incumbent upon us to make known this danger to others, and do all we can to bring about an adequate system of inspection. To this end your committee believes that veterinarians should be made members of boards of health whenever practical, and we would recommend that articles be published from time to time in our newspapers bearing upon the different phases of this subject; that each municipal council should pass an ordinance bringing each slaughter-house in the vicinity under municipal control, requiring them to do all their slaughtering at one abattoir, and that at a time when the council can best provide a qualified inspector, chosen by them, and to whom he must render a regular report.

"Dairy and Milk Inspection."—It has been requested by the chairman of the Sanitation Committee that I prepare a report on 'Dairy and Milk Inspection' and setting forth what it should be. The inspection of the dairies and milk in my part of the State has received no attention at all in regard to sanitary conditions, and the dairymen conduct their dairy business in a

way that is satisfactory to themselves, taking no thought of the consumers of the milk.

"The dairy and its product should receive our best attention, as there is no one article of food in such universal use as is milk ; possessing as it does all the elements necessary for primary growth, it is the initial and only food for the newly born and continues as such for months. Milk will receive and convey the odor of its surroundings. The unpleasant flavor of certain vegetables, and sour or fermented foods which the cow may eat is readily detected in milk, and of all food that reaches our table none affords a more genial habitation for nearly every form of bacterium than milk. Not a year passes but that we find living proof of communicability of disease of various kinds through the medium of milk.

"Milk is part of the cow and is therefore animal matter. If the cow is tuberculous her milk is part of a diseased cow, and no matter how much it is boiled, it still remains part of a diseased cow and should not be used for human food. Now, while we are trying to protect the public against the use of this diseased milk, we should also protect the dairyman, and warn him against buying well-bred cows to increase the richness of his milk, simply because he can buy them cheap, lest he introduce some disease with them into his herd. I doubt if any one who has not been actually engaged in the inspection of dairy stables can appreciate the condition in which cows are sometimes found. Inflammation of the udder is a very common affection and in this case the secretions from the diseased organ pass away with the milk. In some cases there is tuberculosis of the organ, when, of course, the condition is even more serious. We may readily see that one or two diseased cows can contaminate the milk of a whole herd and render it unfit for use. There are many cases on record in which there is undeniable proof of the spread of typhoid fever, diphtheria and many other forms of disease through the medium of milk.

"The dairy industry is getting to be a very common one in our country, especially in larger cities, and we find only a small portion of the dairies under sanitary inspection. In this field I believe we can do a great work for humanity. We should impress upon the dairyman the criminality of selling milk from diseased cows, and induce him to apply sanitary principles to his dairy, such as thorough cleanliness, light, good ventilation, pure water supply, and good, wholesome food.

"We should be in touch with our health officers in our

locality, working together in one common cause to maintain the health of the community. It is along this line of work that the veterinarian can make for himself a reputation worthy of his calling. The only way these things can be accomplished is by legislation.

"It now remains with this association to use every means in its power to see that some proper law is passed by our legislature requiring that all dairies should be under strict inspection.

"State Control of Contagious Diseases.—Regarding contagious animal diseases our State this year seems to be remarkably fortunate so far as I am able to discover. The one disease that overshadows all others in its peculiarly slow, insidious and almost imperceptible, but none the less fatal progress, marches on almost unhindered and I might say by the large majority yet unknown. Tuberculosis seems still to elude all sanitary attempts of states and nations to satisfactorily control its ravages among human beings or their animal servants. Our State up to within a few years has been comparatively free from its grasp on our domestic animals, but we are fast becoming, as it were, a dumping ground of high bred infected stock from other States used in our higher bred herds for the supposed purpose of improvement. From these it is carried to all classes of stock and to all localities into which they may happen to be taken. Perhaps the warning recently given by the Secretary of Agriculture against the importation of high-bred stock, together with the tuberculin test imposed on all imported stock under his direction will do much to educate those concerned as to the nature and prevalence of the disease.

"The stock owner should remember that, even though there is at present some reason to believe, or rather to hope, that the principal source of infection for human beings is other human beings and for animals is other animals, an ounce of prevention in either case is worth many pounds of cure. The modern history of our knowledge of this disease is largely a recital of the achievements of Prof. Koch and his influence on the work of other modern investigators, and may be divided into three chief epochs. The first dating from his modest announcement in 1882 that he had traced tuberculosis to the presence of a bacterial parasite. Seldom, if ever, had any medical discovery been received immediately with such intense interest and yet the ground at that time was thoroughly broken for the reception of this seed, which immediately took root and thrived like the

proverbial green bay tree. This discovery gave a wonderful impetus to the work of modern pathology.

"The second epoch dates from the somewhat more sensational announcement of the secular press in 1890 of his discovery of a cure for this disease in tuberculin. Prof. Koch was then in the employ of his government at a salary of \$7000 per annum besides a pension, had one of the finest laboratories for bacteriological research in the world and was assisted by a well trained and well paid corps of assistants. Though tuberculin did not fulfil its promise as a curative agent it has paid its cost many times over as a diagnostic agent.

"The third epoch was ushered in last summer at the British Congress on Tuberculosis by the widely heralded announcement by this same Prof. Koch that human tuberculosis cannot be transmitted to cattle and very strongly intimating the reverse conclusion that animal tuberculosis is very seldom if ever transmitted to the human being. This latter part especially has raised a storm of protest among investigators the world over, and even though the specific contention may be proved beyond a doubt untrue, it will have accomplished a grand result by spurring on its final settlement.

"In reviewing the legislation by the different States and Territories on this subject as compiled by the Department of Agriculture in bulletin No. 28, we find forty-nine different laws or absences of law enumerated regulating, or intended to regulate, this malady in the different States and Territories.

"The laws of our own State make no specific reference to tuberculosis. The only mention is in rule 12 of the rules and regulations of the State Board of Health, which reads, 'In suspected cases of bovine tuberculosis the tuberculin test shall be recognized as a valuable diagnostic.' This is excellent as far as it goes, but whether this declaration is all the law in the case will warrant or the expediency of circumstances permit, we are without the necessary data to judge. The State Veterinarian by virtue of his office as a member of the State Board of Health is looked upon as the State veterinary sanitarian, and if the law as it now exists is too vague and indefinite to allow of anything more explicit, we should have the hearty and concerted support of every graduated veterinarian and his friends in this State to bring about the passage of a law or the adoption of rules and regulations that his experience will have shown to be practical.

"The next most insidious disease which the sanitarian of this State has to deal with is, perhaps, glanders. We believe

this disease to be more generally understood and feared by the community at large than is tuberculosis.

"Anthrax, so far as I have been able to determine, has not gained any permanent foothold in our State as it has in certain States farther south on the Mississippi. There is, however, always a possibility of its invading our territory.

"Sporadic outbreaks of rabies and other infectious diseases have been discovered within our borders and were promptly and efficiently handled by the State Veterinarian and his assistants.

"Hog cholera and swine plague, for some reason or other, seem to have spent their fury, and the hog has seemed to enjoy extraordinarily good health the past season. How much this may be due to an enforced economy of feeding on account of high prices of grain I shall leave to you and the producer to conjecture. Certain it seems that a large part of the annual loss from this source could be obviated by intelligent sanitary measures. It will certainly not be contended that this improvement has been brought about by the strict enforcement of the law against buying, selling or giving away the carcasses of hogs dead from this disease, or against the transportation of infected hogs over the public highways.

"It would be highly interesting and instructive to know how much the prevalence of this disease has been lessened by the general early sale of all suspicious hogs for immediate slaughter and the consequent removal of these centres of infection with as little delay as possible, although this is in direct opposition to the intention of the law. This law, however, has been of inestimable value in fixing a large per cent. of the loss on the original owner of this stock by his willingness to refund money paid for diseased stock rather than stand for prosecution under the statute. In passing I might remark that I do not know of a better or more economical plan of rendering innocuous any carcass or part of a carcass affected with any known contagious disease than by the method of tanking now employed around any large slaughter-house, and this one point alone would render the consolidation of the little country slaughter-houses into one well-equipped house desirable if for no other reason. In this way the different centres of infection operating through the feeding of offal in a raw state to other stock would be eradicated.

"As to the transportation of stock intended for breeding or feeding over our railroads, we believe that this can be done only in freshly disinfected cars. The stock should be loaded at tem-

porary movable chutes that have likewise been recently disinfected. The same precautions should be observed in unloading.

"Regarding sheep scab, I wonder how many of our members know of the provision of our code for the handling of this malady and whether it has ever been enforced, and, if so, why it cannot be made to come under the jurisdiction of the State Veterinarian.

"Finally, regarding legislation to right some of these matters, your chairman recommends the concentration of our energies through our Committee on Legislation, with the object of procuring legislation that will ultimately result in compulsory State meat inspection under the supervision of the State Veterinarian, or the State Board of Health with the State Veterinarian as its executive officer. At present the law should not be mandatory, but should simply enable cities, towns, or townships to regulate their local affairs through their local boards, subject to certain restrictions of the State board. There ought also to be some scheme devised whereby vital animal statistics and statistics of country slaughter-houses not under inspection could be obtained and classified under this same authority. In a word, publicity and a general enlightenment of ourselves and the public is the key to the adjustment of these problems. The municipal slaughter-house combined with a system of insurance of clinically sound animals under the supervision of well trained, honest, courteous, discreet inspectors will solve the problem and lead to the establishment of a system for the detection and prevention of most of our contagious diseases.

"As we said before, there is nothing new or original in this report. We have in our small way gathered a few ideas from the various sources at our command which may be termed sprigs of promise that, with a little mixture of technical ability and common sense, may be engrafted upon the branches of the hardy old tree of existing conditions without any fear of injuring its vitality and with some hope of improving the quantity and quality of its fruit and the beauty of its foliage.

"Respectfully submitted,

"T. A. SHIPLEY
"J. MILLER
"H. M. GILLIAN
Committee."

On motion the report was received.

Dr. S. H. Kingery then presented an extemporaneous report on "Ravages of *Strongylus Tetracanthus*."

The report of Dr. E. G. Marten on "Urethral Calculus" * was, in his absence, read by the Secretary.

The report of Dr. G. P. Statter on "A Cow Case" * was, in his absence, read by the Secretary.

In the absence of Dr. J. Thomsen his report on "Open Joint" * was read by Dr. Scott.

Dr. C. C. Lyford, of Minneapolis, Minn., was introduced and spoke on the subject of the meeting of the American Veterinary Medical Association, which takes place at Minneapolis in September next. He gave all graduated veterinarians a cordial invitation to attend the meeting, assist it by their presence and receive its benefits. He said that arrangements had been made to entertain the members and visitors and their ladies, and that the ladies would be admitted to the banquet.

Dr. S. D. Brimhall, also of Minneapolis, Minn., was introduced, and after extending an invitation to the graduated veterinarians of Iowa to attend the sessions and social functions of the meeting of the American Veterinary Medical Association next September, he gave a short talk on the veterinary sanitary laws of Minnesota. As Dr. Brimhall is veterinary officer of the State Board of Health of Minnesota and is charged with the administration of the State veterinary laws, this talk from him was very much appreciated.

Dr. Kingery moved that a committee of three be appointed by the President for the purpose of furthering the interests of the meeting of the American Veterinary Medical Association to be held at Minneapolis next September. Seconded, put to a vote and carried.

The President appointed the following committee: Dr. J. I. Gibson, Dr. John J. Repp, Dr. W. A. Heck.

In the absence of Dr. L. U. Shipley, his report on "Typhoid Fever in a Horse" * was read by Dr. Gibson.

In the absence of Dr. Wm. Drinkwater, his paper, "Parturition Cases," † was read by the Secretary.

On vote of the association, Dr. C. C. Lyford and Dr. S. D. Brimhall were elected to honorary membership in the association.

Dr. H. E. Talbot, committee on clinics, announced the operations for which he had arranged, and urged a full attendance.

Dr. C. E. Stewart moved to adjourn until 8 o'clock the fol-

* Will be published in the May REVIEW.

† Will be published in an early number of the REVIEW.

lowing morning, to meet at Dr. Talbot's infirmary. Seconded, put to vote and carried.

FEBRUARY 12TH—SECOND DAY—FORENOON.

This forenoon was devoted to a clinic held at Dr. Talbot's infirmary.

The operations were as follows : Castration of double cryptorchid, by Dr. C. E. Stewart ; castration of single cryptorchid, by Dr. P. Malcolm ; median neurectomy for ringbone, by Dr. D. H. Miller and Dr. P. Malcolm ; removal of tumor from sow's udder, by Dr. W. A. Heck ; arytenoidectomy for roaring, by Dr. J. H. McNeall ; peroneal tenotomy for stringhalt, by Dr. W. A. Heck and Dr. H. E. Talbot.

Dr. Talbot had charge of the clinic, and the arrangements were very satisfactory. The operations were well performed, and the clinic proved very interesting and instructive.

FEBRUARY 12TH—SECOND DAY—AFTERNOON SESSION.

Dr. E. Baughman presented his paper on "Rabies."*

Dr. George M. Walrod read his paper on "Amputation of a Bull's Penis."*

Dr. P. Malcolm presented his paper on "Abortion in Cows."*

Dr. H. L. Stewart read his paper on "Caesarean Section."*

Dr. S. T. Miller then presented his paper on "External Ulcerative Ano-Vulvitis."* He said that the name had been suggested to him by Dr. Repp as a substitute for the name Infectious Ulcer of the Vulva, which had been applied to this disease but did not seem appropriate.

In the temporary absence of Dr. H. E. Talbot from the convention hall his paper on "The Trials of the Veterinary Board"** was read by the Secretary.

Dr. Gibson moved that the Secretary be authorized to edit the proceedings of this meeting and to have them printed in the AMERICAN VETERINARY REVIEW and the *Journal of Comparative Medicine and Veterinary Archives*, if the editors could be induced to publish them ; or to have them printed in pamphlet form if it could be done free of cost by means of advertisements ; the Secretary to use his discretion in making choice between the two methods of publication and to receive the sum of twenty dollars for his services in this connection. Seconded, voted upon, and carried.

* Will be published in an early number of the REVIEW.

The Secretary moved that the next meeting be held at Cedar Rapids. Seconded and after some discussion carried.

On motion it was decided to hold the next meeting between December 1, 1902, and March 1, 1903, the exact time to be decided upon by the President and Secretary.

The Committee on Resolutions then reported as follows :

RESOLUTIONS ADOPTED.

"Mr. President and Members : We, your Committee on Resolutions, beg leave to report as follows :

"Resolved, That it is the sense of this association that the State Legislature should at its present session be very generous in the matter of granting the appropriation asked for and so greatly needed for the use of the veterinary section of the Experiment Station at Ames so that comprehensive investigation may be made in reference to the nature, prevention and treatment of the many diseases of our domestic animals which are so imperfectly understood and which cause such extensive losses, with a view to the prevention of these losses. Also, that the most liberal spirit should control the legislature in granting the appropriations for the other branches of work in the Experiment Station and to the State College for support and buildings.

"Resolved, That we believe that it is requisite for the proper advancement of the Division of Veterinary Medicine of Iowa State College that its management be put into the hands of a veterinarian; therefore, we would respectfully request the Board of Trustees of that institution to place a veterinarian in the position of dean of that division of the college.

"Resolved, That this association give its hearty support and assistance in every way possible to the State Board of Veterinary Medical Examiners in order that the best results may accrue to our profession now and in future years.

"Resolved, That we consider the Bang method of suppression of tuberculosis of cattle to be the best method available and that we commend it to the cattle breeders of the State.

Resolved, That this association believes that there should be complete revision of the laws of our State relating to veterinary sanitation and the powers and duties of the State veterinarian and his assistants. Especially do we believe that all the laws in reference to sheep scab should be repealed and more effective laws enacted in their stead, putting the control of this disease into the hands of the State Veterinary Department and providing sufficient funds to carry on the work.

“Resolved, That it is the opinion of this association that Section 5012 of the code should be amended by striking out the following words, to-wit: ‘knowingly’ in the second and the third line and ‘knowing the same to be’ in the fifth line. And further, that Section 5013 should be amended by striking out the following words, to-wit: ‘knowingly’ in the first line, ‘nasal-gleet’ in the second line, ‘button’ in the third line, and ‘knowing the same to be’ in the sixth line. And further, that Section 5014 should be amended by striking out the following words to-wit: ‘nasal gleet’ and ‘button’ in the second line.

“Resolved, That it is the sense of this association that a competent veterinarian should be chosen by the Superintendent of the Horse Department of the State Fair to pass upon the soundness and freedom from hereditary unsoundness of all horses exhibited at our State Fair. Be it further

“Resolved, That a copy of this resolution be sent to the Secretary of the State Board of Agriculture and to the Superintendent of the Horse Department of the State Fair.

“Resolved, That expert judging of horses both as to soundness and individual excellence be made a feature of our next clinic. And be it further,

“Resolved, That the Committee of Clinic be hereby requested to arrange for the presence for the above purpose of at least two classes of draft horses and two classes of road or carriage horses.

“Resolved, That we express our strong appreciation of the earnest efforts of the late Dr. Rush Shippen Huidekoper in behalf of the veterinary profession in America as author, editor, teacher and practitioner, and especially his efforts in the interest of army legislation, that by his death we have lost one of our most powerful supporters and co-workers, and that we extend to Mrs. Huidekoper our tenderest sympathy for her in her great personal loss.

“Resolved, That we extend our thanks to the management of the Savery Hotel for placing at our disposal a convention hall free of charge, and to the newspapers of Des Moines for their courteous treatment.

“GEO. A. SCOTT
“J. I. GIBSON }
“F. J. NEIMAN } Committee.”

The report of the Committee on Resolutions was on motion unanimously adopted.

The election of officers resulted as follows:

President—Dr. J. I. Gibson, Denison.

First Vice-President—Dr. W. A. Heck, Maquoketa.

Second Vice-President—Dr. T. A. Shipley, Cedar Rapids.

Secretary and Treasurer—Dr. John J. Repp, Ames.

Board of Censors—Dr. S. K. Hazlet, Oelwein ; Dr. Geo. A. Scott, Independence ; Dr. W. H. Austin, Newton.

The appointment of committees was deferred.

Dr. W. A. Heck offered special resolutions as follows :

"Resolved, That inasmuch as the offering of unsound stallions to the public for breeding purposes is a menace to the best interests of the horse-breeders of the State, we recommend the enactment by the legislature at its present session of a law requiring the licensing of all stallions used for public service as sires.

"Resolved, That we extend to Dr. H. E. Talbot a vote of thanks for providing such an extensive clinic for our benefit, and that the usual appropriation be made to defray the expense in connection therewith."

On motion these resolutions were adopted.

The Committee on Resolution on Dr. John E. Brown, reported the following resolution :

Resolved, That we extend to Dr. John E. Brown, our former Secretary, our hearty good will, an expression of our high appreciation of his generous efforts through so many years in behalf of our association, and our best wishes for the health, happiness and success of himself and his family in their new southern home.

"J. I. GIBSON,
"GEO. A. SCOTT,
"JOHN J. REPP."

On motion it was unanimously adopted.

The Secretary moved that the President appoint a Committee on Legislation. Seconded, voted upon and carried.

The Committee on Disease and Treatment submitted a report as follows :

REPORT OF COMMITTEE ON DISEASE AND TREATMENT.

"My report on disease and treatment must be brief. The members of the association have been somewhat negligent in reporting for this committee. Abundant material could be offered if members would take notes on cases, observing the new phases of disease and its prevention and treatment.

"In this State the usual diseases have appeared. Tuberculosis is on the increase. It has been noticed, however, that the most intelligent, active and successful farmers are now begin-

ning to view tuberculin as a valuable aid to diagnosis. They take more kindly to the tuberculin test, and feel that it is the only method by which a check can be put upon the course of this scourge. Actinomycosis is prevalent. Treatment with potassium iodide in the early stages is most gratifying, and in the later stages excision of growths and bone if necessary is of much benefit, and cures a large majority of cases. Bichromate of potassium in 20 per cent. solution has proved valuable in swabbing out abscess cavities. Impaction of the third stomach and cornstalk disease are frequent, and the fatality great. The symptoms of these diseases appear to me very similar at times, and treatment must be entirely preventive. Glanders and farcy are met with occasionally. Malignant catarrh of the ox has been epizoötic throughout the northeastern portion of the State, but was of a rather mild type and readily amenable to ordinary remedies.

"In two herds of cattle in Floyd County afflicted with contagious abortion I applied treatment which consisted of the daily application of antiseptic washes to the external genitals, rump and quarters; thorough disinfection of the stable and discharges; careful removal of membranes when retained and irrigation of the uterus. In addition 4 drams of a three per cent. solution of carbolic acid was given subcutaneously once daily for the first week, then the dose gradually decreased until at the expiration of a month it was discontinued. The disinfection was kept up a month longer. At this time all signs of abortion had disappeared completely from the two herds.

"Dr. J. G. Parslow writes that in his territory during May and June epizoötic cellulitis prevailed extensively in severe form, but caused but little loss of life.

"Blackleg caused considerable anxiety in sections and is on the increase owing to lack of confidence in vaccination on the part of the farmers. Cornstalk disease has caused considerable loss. It appeared from two to four weeks after the cattle were turned into the fields. No remedy seems of any avail. Dr. P. O. Koto reports cornstalk disease in his part of the State. Dr. H. E. Talbot writes that cornstalk disease has been very prevalent and very fatal. He has also had about 200 cases of what is similar to foot-and-mouth disease. The disease has all the symptoms of contagious aphtha and is as much like what we have been taught to call foot-and-mouth disease as a twin-brother and may be called that for want of a better name.

"J. H. McLEOD, *Chairman.*"

On motion the association went into secret session.

Dr. Heck moved that the Secretary be instructed to invite only graduated veterinarians to our next meeting. Seconded, voted upon and carried.

On motion the association adjourned.

The following members were in attendance at the meeting : G. Lames, Dysart ; C. A. Clinton, Havelock ; Geo. M. Walrod, Storm Lake ; C. E. Stewart, Chariton ; John J. Repp, Ames ; P. O. Koto, Forest City ; W. A. Heck, Maquoketa ; P. Malcolm, New Hampton ; A. B. Wilmoth, Des Moines ; A. A. Adamson, Newton ; W. H. Austin, Newton ; John H. McNeall, Ames ; S. H. Kingery, Creston ; D. E. Baughman, Fort Dodge ; M. Y. Schaffer, Des Moines ; S. H. Bauman, Birmingham ; F. J. Neiman, Marshalltown ; S. T. Miller, Shelby ; S. K. Hazlet, Oelwein ; D. H. Miller, Harlan ; H. C. Simpson, Denison ; H. E. Talbot, Des Moines ; H. L. Stewart, Lacona ; Joseph Biggs, Union ; T. A. Shipley, Cedar Rapids ; J. I. Gibson, Denison ; J. A. Campbell, Des Moines ; Geo. A. Scott, Independence ; J. R. Sanders, Corydon ; N. A. Kippen, Riceville ; J. S. Potter, Iowa City ; G. L. Buffington, Baxter ; C. W. Stevens, Knoxville.

The following visitors were in attendance : Hon. W. M. Greeley, Ames ; Drs. C. C. Lyford, Minneapolis ; S. D. Brimhall, Minneapolis ; Thos. D. Hulme, Commerce ; Carl W. Gay, Ames ; H. B. Treman, Sioux City ; W. L. Evers, Iowa Falls ; Messrs. C. E. Harlan, Des Moines ; W. J. Wallace, Des Moines ; C. G. Martin, Des Moines ; A. C. Lookingbill, Yale ; Ira W. Edwards, Redfield ; P. C. Price, Shell Rock ; F. A. Blake, Harper ; Zan Cotter, Chicago ; A. W. Russell, Meservey ; A. F. Baldwin, Ames ; Walter E. Miller, Ames ; Albert Stigers, Stuart ; J. C. Boyd, Kansas City ; R. H. Stevenson, Sigourney ; Wm. R. Simpson, Elliott ; H. M. Stevenson, Perry ; H. C. Dillman, Oakley ; J. E. Harley, Chicago ; J. N. Cozzens, Colo ; S. T. Bodell, Winthrop ; W. L. Turner, New Hampton.

Respectfully submitted,

JOHN J. REPP, *Secretary.*

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The tenth semi-annual meeting was called to order by President Dr. J. N. Gould at the Merchants Hotel, St. Paul, at 2:00 P. M., Jan. 15th, 1902. The following members were present

and responded to roll-call: Drs. C. C. Lyford, M. H. Reynolds, S. D. Brimhall, R. Price, L. Hay, K. J. McKenzie, S. H. Ward, G. A. Dallamore, J. G. Annand, J. N. Gould, George McGillivray, J. W. Gould, B. A. Pomeroy, H. C. Lyons, J. S. Butler, H. C. Peters, M. J. Sexton, F. H. Farmer, E. T. Frank, C. T. Eckles, J. P. Foster, R. LaPointe, Jno. McKay, J. W. Cook, D. M. McDonald, J. M. Lambert, Oscar Rydell, F. A. Illstrup, J. J. Findley, Geo. Leech, and R. H. Jerner.

The Treasurer's report was read and accepted.

The following applicants were duly elected to membership: Dr. R. K. Jerner (O. V. C., '96), Chatfield, Minn.; Dr. Edward L. Kalb (O. V. C., '93), Rochester, Minn.; Dr. Geo. Leech (O. V. C., '91), Winona, Minn.; Dr. J. J. Finlay (O. V. C., '88), Duluth, Minn.

Dr. D. M. McDonald reported for Committee on Colleges; Dr. Hay read his report on recent veterinary literature pertaining to medicine, describing some interesting cases of poisoning by overdoses of sodium hypo-sulphite; Dr. Hay recommended the administration of potassium iodide in 3 ii doses a short time prior to parturition as a prophylactic measure to prevent parturient paresis.

Dr. Price next read his report on "Bacteriology," which brought out a lively discussion on tetanus and anti-toxines.

Dr. Annand's report on "Surgery" came next, describing a new operation for the treatment of impervious urachus. Dr. Annand also discussed the treatment of indolent summer wounds, also the best method of overcoming spasmodic contortion of the os uteri.

Dr. Brimhall next reported for the Committee of Infectious Diseases, stating there had been 1235 cases examined for glanders during the past year; 500 had been tested with mallein and 325 had been condemned and killed. There had been 9982 cattle tested for tuberculosis, of which 458 reacted and 315 had been killed. Hog cholera had not been prevalent. There had been 90 cases of actinomycosis reported, of which 20 were condemned as not fit for food purposes. Black-leg existed in four counties. Hæmorrhagic septicæmia had been reported from several counties.

Dr. Reynolds next reorted for the Committee on Legislation and Empirics. The doctor proposed a committee of three to take charge of the prosecution of quacks. On motion, a committee of three was appointed. The committee appointed was: Drs. S. H. Ward, M. H. Reynolds, and J. S. Butler.

The election of officers then took place, and resulted as follows:

President—Dr. C. C. Lyford, Minneapolis.

First Vice-President—Dr. E. T. Frank, Warren.

Second Vice-President—Dr. J. P. Foster, Selby, South Dakota.

Secretary and Treasurer—Dr. K. J. McKenzie, Northfield.

Trustees—Drs. J. W. Cook, H. C. Peters and M. H. Reynolds.

On motion, a committee of three was appointed to draw up resolutions expressing our sympathies and feelings towards Dr. Youngberg and also regarding the death of Dr. Huidekoper. The committee appointed was; Drs. Brimhall, Frank and Price.

The following were then presented and adopted:

Resolved, That we the members of the M. S. V. M. Association, learn with sincere gratification of the markedly improved condition and hope for a speedy recovery of our esteemed colleague, Dr. A. Youngberg, of Lake Park, Minn.

Resolved, That a copy of the above be spread upon our minutes, and that a copy of the same be sent to Dr. Youngberg by our Secretary. (Signed) Dr. E. T. FRANK,

Dr. R. PRICE,

Dr. S. D. BRIMHALL.

WHEREAS, The M. S. V. M. Association learns with regret the decease of our most eminent and esteemed colleague, Dr. Rush Shippen Huidekoper, we feel that in his death the veterinary profession has lost a most brilliant and untiring worker. Therefore, be it

Resolved, That we hereby express our appreciation of his unselfish life work for his profession and our sorrow at his death. (Signed) Dr. S. D. BRIMHALL,

Dr. E. T. FRANK,

Dr. R. PRICE.

Adjournment for supper was taken.

After supper the members met at the State Experimental Station, where several cases were exhibited that had been operated upon at previous meetings, among which were two cases of capped hock that had been operated upon two years previous; they had proved quite a success. Drs. Reynolds and Peters operated for the repulsion of a fourth molar, performing Williams' operation, removing the outer plate of the alveolus. Dr. Lyford exhibited several cases sent over from his infirmary in Minneapolis.

Thursday forenoon was spent at the Bacteriological Laboratory of the State University, where the members were entertained by Dr. Westbrook, the bacteriologist, and Dr. S. D. Brimhall. The members' visit to the Laboratory proved a profitable as well as an enjoyable forenoon.

Thursday afternoon the meeting was again called to order at the Merchants' Hotel, where the following paper was read, "Clinical Notes on Contagious Pneumonia," by Dr. S. H. Ward. The doctor reported 30 cases in one outbreak, of which number eight died. Autopsies were held and specimens sent to Dr. Westbrook, of the Bacteriological Laboratory, who confirmed the diagnosis. Dr. Ward's paper was quite lengthy and brought out a lively discussion.

Dr. Peters read his paper on "Verminous Aneurism of the Mesenteric Artery the Starting Point of a Fatal Septicæmia." This paper was original and proved Dr. Peters to be a student along the bacteriological line.

Dr. L. Hay next read his paper on "Eserine, its Uses and Abuses." This paper brought out a spirited discussion on the uses of eserine and on colics in general.

Dr. Lyford read a paper on "Bursal Enlargements," exhibiting photographs of cases before and after being operated upon. This was a paper that had been read before the A. V. M. A., and was presented before our association at the request of quite a number of the members interested in Dr. Lyford's radical surgery.

On motion, this association guaranteed a fund of \$500 to help entertain the A. V. M. Association, providing their next meeting was held in Minneapolis.

On motion, the President was empowered to appoint a committee of as many as he deemed necessary to help in entertaining the American Association.

On motion, a Press Committee was created consisting of three, to look after the press work of the society. The following constitute the committee as appointed: Drs. M. H. Reynolds, S. H. Ward and K. J. McKenzie.

At this juncture Dr. S. D. Brimhall read a communication from a clerk of the court, located in New York, regarding the qualifications of a Dr. Schmead, now lecturing with the Minnesota State Farmers' Institute.

On motion the following was added to our by-laws, Article X, Code of Ethics, as embodied in the by-laws of the A. M. V. A., embracing also that it shall be considered a breach of ethics for

any member of this association to reveal to any one not a member of this association particular or specific treatment practiced by a member of this association for the encouragement and help of each other.

At this juncture President Lyford appointed the following committees :

Colleges—Dr. H. C. Peters.

Infectious Diseases—Dr. J. G. Annand.

Bacteriology—Dr. S. D. Brimhall.

Surgery—Dr. L. Hay.

Medicines—Dr. R. Price.

Legislation—Dr. S. H. Ward, Dr. M. H. Reynolds, Dr. J. S. Butler.

Finances—Dr. W. Amos.

Resolutions—Dr. S. D. Brimhall, Dr. E. T. Frank, Dr. Richard Price.

Press Committee—Dr. M. H. Reynolds, Dr. S. H. Ward, Dr. K. J. McKenzie.

The next meeting of our State Association with the American Association was discussed quite freely, no formal action being taken, but the opinion was freely expressed that it would be desirable to hold a very short business meeting, probably on the Monday afternoon preceding the meeting of the A. V. M. A., adjourning the summer meeting from July 1 to September 1, accordingly.

Dr. Reynolds urged the members of the State Association to assist him in building up a veterinary museum that would be a credit to the State, urging particularly that material should be selected with a view of teaching value and not as mere curiosities, each donor to be given full credit on the descriptive label or placard. Dr. Reynolds also suggested the advisability of having the regular meetings reported and thought this could be arranged for without great expense.

The following resolution in regard to Dr. Schmead, veterinarian to the State Farmers Institute corps, was introduced by the Resolution Committee, previously instructed to do so :

WHEREAS, One known as Dr. Clarence B. Schmead is posing in the State as a qualified veterinarian, and is known as the State Farmers' Institute Veterinarian ; and

WHEREAS, We learn from reliable sources that he is not a graduate of any regular recognized authorized veterinary college ; therefore, be it

Resolved, That this association protest against his appearing

under the title of "Doctor of Veterinary Medicine" or any other title, or be recognized in any way which will carry the impression that he is a qualified veterinarian.

(Signed) S. D. BRIMHALL,
E. T. FRANK,
RICHARD PRICE.

The resolution was adopted, and the Secretary instructed to present the same to the Board of Control of the State Farmers' Institute and also to Superintendent Gregg, of Lynd, Minn.

Dr. Price presented in writing a motion to change the date of the annual meeting from the second Tuesday to the Thursday following the second Tuesday in January. The question arose as to the validity of this action, but it was decided to call for a vote upon Dr. Price's motion to change the date of the meeting. The motion being duly seconded was carried unanimously.

K. J. MCKENZIE, *Sec. and Treas.*

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held in the parlors of the Grand Hotel, San Francisco, Dec. 11, 1901, and was called to order by President James Sullivan.

The following members responded to roll-call: Drs. Spencer, Sr., Sullivan, Megowan, Pierce, Jackson, Hogarty, Egan, Dalziel and Blemer. *Visitors.*—DeVoe, Prof. Ward, Fisher, Boomer, Keefer, Somers, McCarty, McLain, Creely, Urey, Inspector Lyman Wilson, and Supervisor G. H. Whitworth, of Merced County.

Unfinished Business.—The application of Dr. James Summerfield, of Santa Rosa, came up, and the question of his having a State certificate was waived. The Board of Examiners submitted a favorable report signed by Drs. Spencer, Pierce and Megowan; Dr. Summerfield was duly elected a member of the association.

The Report of Secretary and Treasurer was read and approved. A vote of thanks was tendered to Dr. Blemer.

Dr. Blemer read a paper on the importance of building up the association; spoke of the important sanitary work to be accomplished by the veterinarians of California, requested the assistance of the association, suggested the burial of past grievances, actual and imaginary, call every man's record clean, start him in anew, and help keep him in the straight and narrow path.

Dr. Pierce substantiated Dr. Blemer, acknowledging the rut into which the association had fallen, expressed the belief that this could and would be remedied, says Californians generally have a purpose in view, and it should be so with this association, and that purpose be to obtain and keep the membership of every veterinarian in the State.

Dr. Blemer explained the State live stock sanitary laws, etc.

Dr. Spencer, Sr., upheld Drs. Pierce and Blemer, and made an eloquent plea for the association, approves dropping all feeling toward all "black" veterinarians, should resolve ourselves to attend meetings.

Dr. Megowan complimented the attendance of present meeting and hopes to have them all with us at the next meeting.

Prof. Ward spoke of his experiences in the East and of the importance in building up this association.

Short but thoroughly interesting speeches were made by Drs. Fisher, Creely, Boomer, Keefer, Somers, DeVoe, McCarty, McLain.

Supervisor Whitworth spoke of the work their county has in hand, and trusts to eradicate infectious and contagious diseases from their county.

Inspector Wilson spoke in a very interesting manner of his work, and regretted that he was not a veterinarian instead of an ordinary cowman.

Dr. Dalziel, editor of the long felt want, *The California Horseman*, told one of his irresistible funny stories, and was given the "ha-ha."

Applications for Membership :—Drs. J. B. Boomer, A. J. DeVoe, E. J. Creely, C. W. Fisher, Prof. A. R. Ward, James Somers, John McCarty, Wm. C. McLean, C. F. McCarty, and Jules H. Uri.

Dr. Pierce moved to suspend the rules. Seconded by Dr. Blemer.

Dr. Megowan offered a resolution to amend the by-laws in the matter of changing the Secretary's salary from \$25.00 to \$5; initiation fee to \$2, and the yearly dues to \$3. Carried.

Dr. Blemer moved that members owing back dues be reinstated, and dues paid to Jan. 1, 1902, upon payment of two dollars.

Applications for membership were referred to the Board of Examiners, which body requested all visitors present except Dr. Creely to retire to the ante-room. Dr. Creely was thoroughly

questioned by those remaining as to the character of his veterinary college, its present and proposed course, etc. Dr. Creely answered all questions in a satisfactory manner, assured the association that he was and would continue to do all in his power to promote and advance the profession, and requested that the association's Board of Examiners submit his senior students to an examination before they came before the college faculty for final examinations. After lengthy discussion it was agreed to accept graduates of Dr. Creely's college into the association.

Election of Officers.—The following officers were duly elected for the ensuing year :

President—Dr. Wm. F. Egan, San Francisco.

Vice-President—Dr. J. B. Boomer, San Francisco.

Secretary—Dr. C. H. Blemer, Sacramento.

Treasurer—Dr. F. E. Pierce, Oakland.

Examiners—Drs. H. A. Spencer, San José ; C. L. Megowan, Sacramento ; E. J. Creely, San Francisco ; A. R. Ward, Berkley ; and C. W. Fisher, San Mateo.

A vote of thanks was given to the retiring President, Dr. Sullivan, who responded in kind and relinquished the chair to Dr. Egan.

Dr. Dalziel, Secretary of the Golden Gate Driving Association, extended an invitation to the association to hold their next meeting in the rooms of the Driving Association in the Palace Hotel.

Motion to adjourn was made and seconded. Adjourned.

CHARLES H. BLEMER, D. V. S., *Secretary.*

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The semi-annual meeting was held at the Kirby House, Milwaukee, September 10th, and was called to order by the President, Dr. C. E. Evans, at 7.30 P. M., with the following members present ; Drs. S. J. Beattie, J. F. Roub, C. H. Armond, H. A. Arpke, E. L. Morgenroth, H. F. Eckert, B. L. Clarke, W. G. Clark, J. T. Pfeiffer, A. H. Hartwig, C. E. Evans, S. S. Snyder, W. S. Powell, R. H. Harrison, E. D. Roberts, Chas. Koehne, J. T. Hernsheim, H. Caldwell, A. J. Nelson, P. J. Wilkinson, S. J. Collins, L. N. Jargo, G. Ed. Leech, and E. R. Flack. Visitors : J. A. McGarry, C. E. Brown, Adolph Eichhorn, Wm. Fotheringham, and C. J. Huenink.

The minutes of the last meeting were read and approved.

The President appointed Dr. C. H. Armond on the Press Committee in place of Dr. Cochrane, who had removed from the State.

Dr. Beattie reported on behalf of the Committee on Illegal Practitioners the receipt of complaints against sixteen illegal practitioners, and that copies of the State veterinary law and notices had been sent them. The question of the prosecution of illegal practitioners was then discussed by Drs. Leech, Powell, Hartwig and Beattie. It was moved by Dr. Leech that the society make a test case of one of the violations of the law, and, if necessary, assess each member from \$5 to \$15 to pay the expenses of the same. The motion was duly seconded, and, after discussion by Drs. Armond, Hartwig, Harrison, Eckert, Collins and Roub, was carried by a rising vote of 13 to 4.

Dr. A. H. Hartwig reported a case of intestinal calculus. This was located in the great colon just anterior to the floating colon. The calculus contained seventy nuclei.

Dr. J. F. Roub reported a case of peritoneal abscess* and described the manner of diagnosis, operation and treatment.

On motion, a vote of thanks was tendered Drs. Hartwig and Roub.

Dr. E. D. Roberts, State Veterinarian, reported an outbreak of disease among cattle in the northwestern part of the State, somewhat resembling anthrax. Several herds were vaccinated with anthrax vaccine, but the results were not satisfactory. About 200 deaths had occurred as a result of the outbreak. Dr. H. L. Russell made a bacteriological examination of the blood and tissues, and discovered a bacillus which he termed the *bacillus hæmorrhagica septicæmia*. Discussed by Drs. Roub, Brown, Eichhorn, Collins, Harrison, Leech, Hernsheim, and Hartwig. On motion, the discussion was closed.

Applications for membership were then taken up and the following were received: Drs. J. A. McGarry (C. V. C.), Milwaukee, and C. J. Huenink (C. V. C.), Cedar Grove. The censors reporting favorably, they were elected to membership by an unanimous vote. The applications of Drs. Wm. Fotheringham and Adolph Eichhorn were received for honorary membership, they being stationed at Milwaukee by the Bureau of Animal Industry. Moved and seconded that they be elected. Carried. The gentlemen were declared elected to honorary membership.

* Will be published in an early number of the REVIEW.

Announcement of the clinics at Dr. Leech's hospital at 8.30 the next morning was made. On motion, the society adjourned to meet in Madison subject to the call of the President and Secretary.

The society met Wednesday morning at Dr. Leech's hospital, and Dr. Adolph Eichhorn performed double neurectomy for the relief of bone spavin. The patient was cast with the English hobbles, and Drs. Leech and Hartwig assisted in administering the chloroform. The operation was very quickly and skillfully performed by Dr. Eichhorn.

W. G. CLARK, *Secretary.*

THE VETERINARY ASSOCIATION OF MANITOBA.

This association held its twelfth annual meeting in the city of Winnipeg, February 19th. The President, Mr. W. A. Dunbar, occupied the chair, and the following members were present: W. H. Smith, Carman; W. R. Taylor, Portage la Prairie; W. J. Hinman, Winnipeg; H. F. Whaley, Glenboro; G. W. Harrison, Cypress; J. McGillivray, Manitou; W. S. Henderson, Carberry; W. Swenerton, Carberry; J. J. Irwine, Stonewall; J. G. Cruikshank, Deloraine; J. Golley, Treherne; C. D. McGilvray, Binscarth; J. Welch, Roland; S. A. Cox, Brandon; J. A. Stevenson, Carman; W. E. Martin, Winnipeg; A. M. Livingstone, Melita; M. Whimster, Hamiota; W. A. Hilliard, Minnedosa; R. D. Scurfield, Crystal City; W. A. Dunbar, F. Torrance, H. D. Smith, C. Little, Winnipeg; D. D. Reid, Hartney, and as visitors Drs. Simpson, Yorkton, and Sankey, Waskada.

The President opened the meeting with a few words of welcome to the members and visitors and then read an interesting and instructive address upon the progress of veterinary science.

A letter from the Secretary of the Winnipeg Humane Society was read, asking the views of the association upon the overhead check. After a full discussion of the subject, it was moved by W. A. Dunbar, seconded by Mr. J. A. Stevenson, "That this association, while deplored the fact that some cruelty is inflicted upon horses by excessively high checking with the overhead check, and anxious to do all in its power to mitigate the evil, also admits that the said check can be used without inflicting pain, and in some cases, such as kickers and hard-pullers, is absolutely necessary for their control and the safety of their drivers, and the Secretary is hereby instructed to reply to the Humane Society in the terms of this resolution." Carried.

The Resident Secretary of the A. V. M. A. called the attention of the members to the fact that the next meeting of that association would be held in Minneapolis during the first week in September. Reduced fares would be obtainable from the railways, and all who went could depend upon having a profitable and enjoyable visit. He hoped a large number would take the opportunity.

The Secretary-Treasurer read his annual report, showing a membership of seventy-five and a surplus in the treasury of some four hundred dollars.

The examiners reported that during the year four candidates presented themselves for examination, of which two were successful, Mr. C. D. McGilvray, of Binscarth, and Mr. R. D. Scurfield, of Crystal City, both graduates of the McKillip Veterinary College, of Chicago.

The election of officers for the ensuing year resulted as follows:

President—S. A. Coxe, Brandon.

Vice-President—A. M. Livingstone, Melita.

Secretary-Treasurer and Registrar—F. Torrance, Winnipeg.

Examiners—W. A. Dunbar, W. R. Taylor and F. Torrance.

Other members of Council—W. S. Henderson and W. Swerton, Carberry.

Auditors—C. Little, W. E. Martin.

The association passed unanimously the following resolution congratulating Dr. Rutherford upon his recent appointment:

"Resolved, That this association rejoices in the elevation of one of its members to the most important post in the Dominion open to the veterinary profession, that of Chief Veterinary Inspector to the Department of Agriculture, and wishes to place on record its appreciation of Dr. Rutherford's work as a founder of this association and as one of its most active members, and hereby tenders him its heartiest congratulations and wishes him every success in his new sphere."

The association also by unanimous vote elected Dr. Rutherford as Honorary Associate.

A resolution was passed to memorialize the Dominion Government to appropriate a sum of money for the investigation of the disease of horses commonly known as "Swamp Fever," which is continuing to cause great losses in parts of Manitoba and the North West Territories.

Dr. W. A. Hilliard read a paper upon an interesting surgical

case occurring in his practice. An animated discussion followed in which the subject of the mallein test was also brought up and some interesting experiences related.

In the hope of inducing the presentation of a larger number of papers at the next meeting the following resolution was passed :

Moved by W. A. Dunbar, seconded by J. A. Stevenson, That three prizes to consist of books or instruments be offered for competition for the best essays or reports of cases presented at the annual meeting, competition limited to members who have never read a paper before the association. The meeting to decide on the merits of the papers. Carried.

After the usual votes of thanks to the retiring President, the essayist and the City Council, the meeting adjourned.

The semi-annual meeting will be held in Brandon in July.
F. TORRANCE, *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President J. F. Winchester has appointed the following Committee on Local Arrangements for the Minneapolis meeting : Dr. C. C. Lyford (chairman), Drs. S. D. Brimhall, M. H. Reynolds, J. S. Annand, J. S. Butler, J. N. Gould, A. Youngberg, S. H. Ward, and K. J. McKenzie.

The local committee has met and organized, forming several sub-committee, each of which are actively at work preparing to make the meeting for 1902 memorable, both in the value and pleasure of attending, also in numbers present. This committee has sent delegates to State meetings held in adjacent territory, and are stimulating a renewed and larger interest in the National Association.

NEWS AND ITEMS.

THE alumni banquet of the New York-American Veterinary College was held at the Hotel Marlborough, New York, April 1.

DR. G. E. GRIFFIN'S article, "Molasses as a Food for Army Horses," published in the February REVIEW, was reprinted in the *Veterinary Journal* (London) for March.

DRS. JAMES A. WAUGH, of Pittsburgh, Pa., and William J. Waugh, of Washington, Pa., celebrated the anniversary of their twenty years' practice on March 31.

DRS. E. M. NIGHBERT and Z. Veldhuis entered the Meat Inspection Service in the Bureau of Animal Industry at Kansas City, March 14th.

DR. H. L. RAMACCIOTTI, of Omaha, Neb., is the proud father of twin boys. At this writing the boys and their mother are doing well.

"I WISH to compliment your successful effort in making the REVIEW the peer of any veterinary periodical published in the world."—(*N. J. Stringer, D. V. S., Watseka, Ill.*)

"CANNOT GET ALONG WITHOUT THE REVIEW. Hope you are getting many new subscribers."—(*A. E. Lambert, V. S., New Windsor, Md.*)

PRESIDENT LOWE'S recent address at Lakewood on "Progress in Veterinary Medicine in its Relation to Public Health," has been well received in medical circles. The *Medical Record* in its issue of February 1st gives space to the entire address.

DRS. J. M. LAWRENCE, F. M. Starr and F. W. Weston of the graduating class of the Kansas City Veterinary College, entered the U. S. Army, Quartermaster's Department, as veterinarians for service in the Philippines, and sailed from San Francisco March 15th.

"YOUR monthly publication has proven a valuable boon to the practitioners and students of veterinary science. I have been a reader of the REVIEW for nineteen years, and I hope I will be able to continue to receive and read it."—(*James M. Reed, Mattoon, Ill.*)

DR. M. E. KNOWLES, State Veterinarian of Montana, visited Kansas City on his way to and return from Fort Worth, where he attended a cattlemen's convention. The doctor expressed himself as favorably impressed with the veterinary outlook in the Central West.

DR. ADOLPH EICHHORN, of the Bureau of Animal Industry, located at Milwaukee, Wis., who so ably presides over "German Review" for this publication, contemplates paying a visit to Europe in June, and promises to spend a few days in calling upon his New York friends.

DR. JOHN S. ANDERSON, Seward, Neb., who had been considered by his old-time friends as a confirmed bachelor, surprised them all by becoming a benedict March 3d, upon which date he joined in life partnership with Miss Myrtle Boyes, of Seward, Neb. The wedding tour included a week's sojourn in Kansas City. A host of veterinary friends congratulate the doctor upon his happy alliance.

ON March 15th Governor A. B. Cummins, of Iowa, appointed Dr. P. O. Koto, of Forest City, Ia., as State Veterinarian, to succeed Dr. J. I. Gibson, of Denison. Dr. Koto has been in practice for quite a number of years and has also been in the drug business. He was a member of the State Legislature during 1900-01. Last year he served as President of the Iowa State Veterinary Medical Association.

VETERINARIAN WILLIAM HERBERT LOWE has been elected a member of the Board of Managers of the Paterson General Hospital and appointed a member of the House and Grounds Committee of that large and important institution for the alleviation of human suffering. We are pleased that the people of the city of Paterson have seen fit to place Dr. Lowe in a position where his knowledge of comparative medicine may be directly applied to the benefit of mankind.

THE FAMOUS "COLORADO INSPECTION CASE" has been won by the State in the Supreme Court of Colorado and will now go to the United States Supreme Court for final adjudication. It will be remembered that in order to get the matter fairly tested Ed. Reid refused to pay State inspection fees on stock to which the Federal inspectors had already given a clean bill of health, whereon he was arrested under the State law, tried and sentenced to go to jail. The case was then appealed to the Colorado Supreme Court, which has now decided in favor of the State. Had the decision been in favor of Reid the matter would have been settled only as far as Colorado is concerned, but when the United States Supreme Court gets through with it the decision will apply to all States equally.

ANIMALS AS DOCTORS.—Every animal doctors itself, says *McCall's Magazine*. Dogs and cats, when not feeling well, eat medical plants, the dog selecting spear grass and the cat showing preference for valerian. They vary this treatment with an occasional dose of ashes or cinders, just as the crocodile, lizard and some birds swallow gravel and stones. The elephant uses its trunk cleverly in dressing wounds, and by this means applies water, dust or mud to the injury. Sir Samuel Baker, the famous big game hunter, saw an elephant plaster up a bullet wound with mud and frequently observed the readiness with which small sores were attended to. Fierce, carnivorous animals, when trapped, often act as surgeons and bite through a limb to free themselves. Rabbits, when wounded, burrow into the ground and lie so that the wound touches the raw earth.

AT the annual meeting of the New Jersey State Board of

Agriculture recently held in Trenton, the following resolution was unanimously adopted: "That the State Board of Agriculture recognizing the necessity and value of competent veterinary service to live stock owners, agricultural interests and the preservation of public health, do heartily approve and endorse the movement for the establishment of a State Board of Veterinary Medical Examiners to regulate the practice of veterinary medicine and surgery in the State of New Jersey."

DR. LOWE'S GREAT LOSS.—The accompanying photo was taken a couple of days after the great fire in Paterson, and represents the front view of Dr. Wm. Herbert Lowe's model infirmary, which, as will be observed, is totally destroyed. The assessed valuation of the property was \$15,000, upon which there was \$10,000 insurance, which was promptly paid. This does not by any means represent the doctor's loss, since his extensive library



of scientific works, which he had been collecting all of his professional life, along with an extensive case of surgical instruments, drugs, and paraphernalia, were a total and irreparable loss. His new ambulance, which cost \$1000, was gotten out and stored in a nearby stable, but during the succeeding flood was greatly damaged. While money can easily replace much of the loss, there are many things gone which cannot be substituted, while the inconvenience and strain upon the nerves can readily be imagined. We know that his professional brethren everywhere extend to Dr. Lowe their fullest sympathy, for he writes the REVIEW asking it to thank them sincerely for their many kind expressions, which, owing to overwhelming circumstances, he cannot find the time to personally respond to. As a mitigating event the doctor greatly appreciates the confidence of his fellow citizens of Paterson, who, while in the midst of his great loss, reelected him to the position of City Veterinarian.

PUBLISHERS' DEPARTMENT.

Subscription price, \$3 per annum, invariably in advance; foreign countries, \$3.60; students while attending college, \$2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

REVIEW readers will be pleased to find on page 1 (ad. dept.), of this issue, the name of one of the most widely known veterinary instrument houses in America, "Haussmann and Dunn Co.," and it will be particularly gratifying to our large circle of friends in Chicago, to find this representative instrument house of their city, show its appreciation of their much loved veterinary magazine, by lending it the support it deserves from every firm who supply goods to the veterinary profession, by using it as an advertising medium: and we trust that the veterinarians will demonstrate their pleasure and gratification, by a hearty return of their support.

The Revere Rubber Company's Air-Cushion Rubber Horse Shoe Pad, needs no "puff;" "it fills with air at each step."

The Abbott Alkaloidal Company, the father of Alkalometry in Veterinary Practice, have done much toward placing the practice of medicine in animals and man on the same plane, and to broaden the possibilities of veterinarians in canine practice.

The Buntin Drug Company still continue to add to their already excellent list of soluble hypodermic tablets, prepared expressly for the use of the veterinary practitioner.

Atkins & Durbrow, of 160 Pearl Street, New York, continue to supply veterinarians with their celebrated intestinal tonic, "Red Ball Brand Stock Food," and they receive the most flattering testimonials from those who employ it regularly in their practices.

A slight error in the advertisement of the "Combination" Veterinary Dental and Surgical Halter, in the March REVIEW by the accidental insertion of the two extra words "instead of," was very misleading, as the nose-band (in the description of which the error occurred), is *heavily padded*, and covered with the softest of leather. The corrected ad. appears opposite page 1 (ad. dept.) of this issue.

REVIEWS WANTED.

The publishers will pay 25 cents each for copies of the April, 1901, issue. Address, Robert W. Ellis, D. V. S., Bus. Mgr., 509 W. 152d Street, New York.